DIRECTORY OF SERVICES

Washington State Department of Health

Washington State Department of Health

Public Health Laboratories

August, 2008

1610 NE 150th Street
Shoreline, WA 98155-7224
(206) 418-5400 FAX (206) 418-5445

PUBLIC HEALTH LABORATORIES

Directory of Services

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DOH KEY PERSONNEL PHONE LIST

PUBLIC HEALTH LABORATORIES:

Website: http://www.doh.wa.gov/phl/default.htm

Director, Public Health Laboratories:

Romesh Gautom, Ph.D......(206) 418-5450

Administration:

Laboratory Main Office .....(206) 418-5400
Main FAX .....(206) 418-5445

Laboratory Office Directors:

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Lain Knowles .....(206) 418-5490
Lain.Knowles@doh.wa.gov

Newborn Screening
Mike Glass .....(206) 418-5470
Mike.Glass@doh.wa.gov

Public Health Microbiology
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Yoland.Houze@doh.wa.gov

Business Offices:

Central Receiving.....(206) 418-5413
Mail Room .....(206) 418-5579
Procurement .....(206) 418-5412

Public Health Laboratories Safety and Quality Assurance Program

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FAX (206) 418-5485

Public Health Laboratories Training Program

http://www.doh.wa.gov/ESHPHL/PHL/train.htm

Program Manager
Shelley Lankford .....(206) 418-5401
Shelley.Lankford@doh.wa.gov
Administrative Assistant.....(206) 418-5402
FAX (206) 418-5445

PHL Laboratory Units

Laboratory Response Network – Biological Event Response Lab ..... (206) 418-5471
Chemical Incident Response ..... (206) 418-5643
Drinking Water
- Bacteriology ..... (206) 418-5489
- Chemistry ..... (206) 418-5492
- MPA ..... (206) 418-5489

Enteric Bacteriology ..... (206) 418-5456
Food Bacteriology ..... (206) 418-5442
Mycobacteriology (TB) ..... (206) 418-5473
Molecular Microbiology
- PFGE ..... (206) 418-5561
- PCR ..... (206) 418-5462

Parasitology ..... (206) 418-5469
Radiation Chemistry ..... (206) 418-5486
Shellfish
- Biotoxins ..... (206) 418-5443
- Marine Water Bacteriology ..... (206) 418-5443
- Food Microbiology ..... (206) 418-5442

Serology ..... (206) 418-5622
Sexually Transmitted Diseases
- Chlamydia ..... (206) 418-5607
- Gonorrhea (GC) ..... (206) 418-5607
- HIV/AIDS ..... (206) 418-5457
- Syphilis ..... (206) 418-5622

Special Pathogens Surveillance (Reference) ..... (206) 418-5452
Virology ..... (206) 418-5458

LABORATORY QUALITY ASSURANCE

http://www.doh.wa.gov/hsqa/fsl/LQA/Home.htm
Program Manager
Susan Walker ..... (206) 418-5418
Susan.Walker@doh.wa.gov
Administrative Assistant ..... (206) 418-5600
FAX ..... (206) 418-5505

NON-LABORATORY PROGRAMS/FUNCTIONS LOCATED AT THE PUBLIC HEALTH LABORATORIES

Office of Epidemiology-Communicable Disease Epidemiology (CD Epidemiology)

Senior Epidemiologist
Marcia Goldoft, M.D. ..... (206) 418-5510
Marcia.Goldoft@doh.wa.gov
Administrative Assistant (24-hour line) ..... (206) 418-5500
Fax ..... (206) 418-5515

Divisional Emergency Response Planning Advisor
(Vacant)

Washington Electronic Disease Surveillance System
Michael Davisson.....(206) 418-5420
Michael.Davisson@doh.wa.gov

OTHER FREQUENTLY CALLED NUMBERS

AIDS Hot Line.....1-800-272-AIDS

Drinking Water Hot Line.....1-800-521-0323

FDA Seafood Hot Line.....1-800-FDA-4010

PSP/Domoic Acid 24-hour Information Line.....1-800-562-5632

Washington State Consumer Assistance Line .....(206) 753-2870
TOLL FREE.....1-800-525-0127

Washington State Basic Health Plan – Insurance.....1-800-773-9872

PUBLIC HEALTH LABORATORIES

GENERAL INFORMATION

MISSION STATEMENTS

Department of Health Mission: *The Department of Health works to protect and improve the Health of People in Washington State.*

Public Health Laboratories Mission: *To provide a wide range of diagnostic and analytical functions for the assessment and surveillance of infectious/communicable, heritable/genetic and chronic diseases as well as environmental contamination. Improve the quality assurance and analytical performance of clinical and environmental laboratories through training and consultation as well as providing scientific and managerial leadership in developing public health policy.*

PUBLIC HEALTH LABORATORIES OVERVIEW

History

The Washington State Public Health Laboratories (PHL) was established by the legislature in the early 1900's. The laboratories were first located in downtown Seattle in the Alaska Building. The Public Health Laboratories were moved to the Smith Tower Building and remained there until 1985. In 1982, work was begun on a new facility located just north of Seattle in the City of Shoreline. The PHL took up residence in the new building in 1985. The laboratories are named in honor of W.R. Giedt, who was the director of the PHL during this period of its greatest

changes and growth from 1943 to 1971. Under his leadership, the PHL met significant challenges in clinical and environmental public health, and adopted new technologies as soon as they were proven reliable.

Over the past ten years, the PHL has focused on the development and implementation of new technologies to provide scientific support focused on improving public health at local, state and national levels. Dr. Gautom has been instrumental in developing a PFGE procedure that produces results within 24 hours for a variety of pathogens (e.g. *E. coli* O157:H7, *Salmonella, Shigella,* etc.) and became the backbone for the national PulseNet system, operated by the CDC to track national food borne disease outbreaks.

Our Clients

Primary users of the laboratories include preventive medicine programs at the state, county and federal level; hospitals; public health and medical laboratories seeking reference or consultation services; laboratories desiring certification; other agencies desiring public health laboratory services; and physicians seeking assistance in diagnosing rare or unusual diseases (botulism, rabies, diphtheria, etc.). In addition, programs and agencies concerned with environmental problems make extensive use of the laboratories.

Laboratory Services

The laboratories are engaged in activities designed to aid in the diagnosis, treatment, and prevention of communicable, chronic, congenital and genetic diseases; to assess the general health of the population; to help safeguard a healthful environment; and to assure high quality work within the health and environmental laboratory community. The laboratories provide diagnostic and follow-up services in the areas of newborn screening, food poisoning, surveillance studies of etiologic agents in the areas of bacteriology, virology, serology and parasitology, radiation chemistry, pesticide residue analysis, and many other disciplines. Training, certification and consultation activities are also provided by the State Public Health Laboratories.

As the state's reference clinical laboratory, the PHL provides local health departments, hospitals, clinics and commercial laboratories with a wide range of services including identification and confirmation of unknown pathogenic organisms, consultation on laboratory methodology and training in current laboratory issues and techniques. As a provider of services to local, state and federal agencies, the PHL is often the focal point for coordinating investigations and mediating the transfer of information between agencies. The staff at the PHL test clinical and environmental specimens/samples associated with known and potential disease outbreaks, and work with epidemiology, nursing and environmental health staff to identify possible sources for outbreaks. The PHL staff performs, on an average, 753,800 tests each year for sexually transmitted diseases, food borne diseases, virus isolation and viral serology, mycobacteriology, environmental microbiology, enterics, parasitology, microbial identification, biotoxins, metals, inorganic chemistry, biotinidase deficiency, congenital adrenal hyperplasia, congenital hypothyroidism, galactosemia, PKU (phenylketonuria), and sickle cell disease in newborns.

Response to Bioterrorism, Chemical Terrorism and Radiological Terrorism

The PHL is participating in a national network called the Laboratory Response Network (LRN) initiated by the Centers for Disease Control and Prevention, Atlanta. The LRN is a collaborative approach between public and private laboratories and is focused heavily on improving laboratory-based bioterrorism and chemical terrorism response capabilities in the United States. Hospital and private laboratories are most likely to be the first to receive patient specimens containing etiological agents used in a covert act of bioterrorism and laboratory professionals must be trained to identify microbial pathogens likely to be used for bioterrorism. Laboratorians must know how to safely collect, transport, and process specimens containing biological agents associated with bio-threat acts and specimens to be analyzed following chemical-threat attacks.

The PHL also participates in the Food Emergency Response Network, a joint effort of the US Food and Drug Administration Center for food Safety and Applied Nutrition (USFDA CFSAN) and US Department of Agriculture Food Safety and Inspection Service (USDA FSIS). The FERN is focused on improving laboratory-based food testing response capacity and capability in the United States. The FERN has responsibility for developing and distributing rapid food testing methods.

The PulseNet Foodborne Disease Surveillance System

The Centers for Disease Control and Prevention (CDC) in Atlanta, Ga., in a cooperative effort with state/local public health agencies, other federal agencies and specialists in the private sector, have developed a food borne surveillance monitoring system known as PulseNet. PulseNet is an early warning system that allows participating state public health laboratories to share critical food borne disease surveillance information, effectively reducing the time needed to respond to regional and national outbreaks of food borne disease. Using PulseNet, Pulsed-Field Gel Electrophoresis (PFGE) images and essential demographic information are shared between experts in the investigation of food borne disease. Bacterial strains, such as *E. coli* O157:H7 and *Salmonella* that may be causing a local food borne outbreak in one part of the country can be quickly compared with isolates from another locale helping to identify problems where a food source is causing a larger outbreak than first recognized. The PulseNet server is connected to the internet and is accessible to selected states participating in the PFGE Project, allowing test results to be transmitted quickly and easily between laboratory sites.

Outbreak Response

During 1996-1997, the Microbiology section began developing advanced molecular biology testing capabilities for bacterial and viral pathogens. The methodologies have allowed the PHL to improve the testing services offered to its customers and also to initiate new research projects. Since 1997, the PHL has been testing samples (nasopharyngeal swabs) submitted for *Bordetella pertussis* by PCR. The PHL has conducted two extensive and divided studies with University of Washington to compare various methodologies for detecting *B. pertussis* from clinical samples.

The Public Health Microbiology staff has been directly involved in the investigation of sporadic cases and outbreaks related to *Escherichia coli* O157:H7, *Salmonella, Shigella, Campylobacter, Vibrio parahaemolyticus, enterotoxigenic E. coli, methicillin-resistant Staphylococcus aureus,*

vancomycin-resistant *Enterococcus, Norovirus,* rubeola, rubella and influenza, only to name a few. The team approach in microbiology and epidemiology has led to timely intervention for outbreak investigations. For example, during the months of July and August of 1999, a unique cluster of 35 cases of *E. coli* O157:H7 was recognized through routine PFGE surveillance testing at the PHL. Patients linked to the cluster reported swimming in a shallow sectioned-off area of a popular swimming lake in southwest Washington. Microbiologists from our Environmental section were able to isolate *E. coli* O157:H7 from sediment samples collected from Battleground Lake. This was the first documented report isolating *E. coli* O157:H7 from lake sediment. Subsequently, the PFGE profile from the sediment isolate was found to be identical with all 35 human *E. coli* O157:H7 cases. The PulseNet system helped to provide assurances that the outbreak was not a large multi-state problem, but one localized problem in southwest Washington.

PHL ORGANIZATION

The Washington State Department of Health is comprised of six divisions. The W.R. Giedt Public Health Laboratories belong to the Division of Epidemiology, Health Statistics and Public Health Laboratories (EHSPHL). The Public Health Laboratories (PHL) is physically located approximately 10 miles north of downtown Seattle in the City of Shoreline, Washington. The PHL are divided into four major offices, each of which report to the Laboratory Director, who in turn, reports to the Assistant Secretary for the EHSPHL Division. The offices that comprise the PHL are the Office of Environmental Laboratory Sciences, the Office of Newborn Screening, the Office of Public Health Microbiology and the Office of Laboratory Operations.

Office of Environmental Laboratory Sciences

The Office of Environmental Laboratory Sciences has approximately 30 technical staff members and is divided into two main sections: Environmental Microbiology and Environmental Chemistry and Radiation. This office is comprised of 8 units that include the Radiation Laboratory, Chemistry Laboratory, Water Microbiology Laboratory, Food Microbiology, Biotoxins Laboratory, Chemical Terrorism Response, Radiological contamination of Food, and Parasitology Laboratory. These laboratory units provide a wide variety of testing of environmental samples and clinical specimens and are certified by several federal programs that include the EPA, FDA, College of American Pathologists and the Nuclear Regulatory Commission.

Office of Newborn Screening

The Office of Newborn Screening has approximately 25 technical, follow-up and support staff. The Newborn Screening program tests every infant born in Washington to detect and prevent the developmental impairments and life-threatening illness associated with ten congenital disorders: biotinidase deficiency (BIO), congenital adrenal hyperplasia (CAH), congenital hypothyroidism (CH), cystic fibrosis (CF), galactosemia (GAL), sickle cell disease, and other clinically significant hemoglobins (HB), homocystinuria (HCY), Maple Syrup Urine Disease (MSUD), Medium Chain Acyl-CoA Dehydrogenase Deficiency (MCADD), phenylketonuria (PKU). The program provides appropriate follow-up and referral of those infants who screen positive to

assure prompt diagnostic and treatment services. In addition, the program provides long-term tracking of affected children to assure continued access to appropriate comprehensive health care. The Office of Newborn Screening screens over 165,000 specimens and conducts over 1.7 million tests every year.

Office of Public Health Microbiology

The Office of Public Health Microbiology has approximately 30 technical and support staff. Reference capabilities in this office include diagnostic and surveillance services that focus on food borne diseases, sexually transmitted diseases, virus isolation and viral serology, mycobateriology, and a variety of new forms of molecular technology. Individual units within the laboratory are headed by leading experts in the field who work together with the Office of Epidemiology, housed in the same facility, on a daily basis. Virology, serology, HIV, and Chlamydia laboratories perform a variety of conventional, serological and molecular tests to rapidly identify disease agents and characterize viral and bacterial pathogens. Standard tests performed by these laboratories include influenza, rabies, syphilis, EIA and western blot for HIV, Gen-Probe Optima Combo 2 Assay for Chlamydia/GC, and IgG and IgM for rubeola/Rubella/Mumps/Hantavirus and West Nile, IgM and Microsphere Immunoassay (MIA). This office also has a state-of-the-art molecular diagnostics unit that uses DNA based technologies including pulsed field get electrophoresis (PFGE) and polymerase chain reaction (PCR) to assist the Office of Epidemiology with outbreak investigations.

Office of Laboratory Operations and Technical Support

The Office of Laboratory Operations and Technical Support have approximately 20 technical and administrative staff. This office is divided into two sections: Administration, and Operations and Technical Support provides building maintenance, fiscal management, mailroom and receiving functions, security, the Safety and Quality Assurance program, and the Training program.

USING THE DIRECTORY OF SERVICES

The Directory of Services has been prepared to aid the user in properly utilizing the laboratories' services. Information is presented on what is available, how to use it and whom to contact. The directory contains the telephone numbers of persons responsible for the various disciplines within the PHL. In the interest of providing timely service, users are encouraged to call the laboratory unit to address specific question. For meaningful results in all areas, an appropriate sample, properly collected and transported along with adequate identifying information, is necessary. Turn-around times are measured in working days. Fees, if applicable, are noted in the directory (all fees are subject to change).

HOW TO REACH THE PUBLIC HEALTH LABORATORIES

24-Hour Emergency Telephone Service

(206) 418-5500

Dialing this phone number will connect the caller to the emergency contact phone operated by the Communicable Disease Epidemiology staff. The person who answers the phone will contact the appropriate laboratory staff.

PHL hours of operation are 8 a.m. to 5 p.m., Monday through Friday. The laboratories are closed on weekends and state holidays which include New Year's Day, Martin Luther King Jr. Day, Presidents Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving and the day after Thanksgiving, and Christmas Day.

Address: 1610 N.E. 150th Street
Shoreline, WA 98155

Parking: Free parking is available on-site.

Driving Directions to Laboratory

I-5 Northbound

Take NE 145th St. exit (Exit #175). After exiting, move to the far right lane. Turn right at the traffic light onto NE 145th St. (eastbound). Proceed in the left lane on 145th St. to the next traffic light at 15th Ave. NE. Turn left onto 15th Ave. NE, travel four blocks on 15th Ave. NE (northbound) to NE 150th St. Turn right onto NE 150th. You will see the state laboratories on the left at the intersection of 17th Ave. NE and NE 150th St.

I-5 Southbound

Take NE 145th St. exit (Exit #175). After exiting, stay in the left lane of the off ramp. Turn left at the traffic light onto NE 145th St. (eastbound). Proceed in the left lane on 145th St. to the next traffic light at 15th Ave. NE. Turn left onto 15th Ave. NE and travel four blocks until you reach NE 150th St. Turn right onto NE 150th St. You will see the state laboratories on the left at the intersection of 17th Ave. NE and NE 150th St.

Note: All laboratory samples, specimens and supplies must be taken to the PHL loading dock near the center of the building on the 17th Ave. NE side. No deliveries will be accepted in the reception area at the main entrance.

COLLECTION AND SUBMISSION OF SAMPLES AND SPECIMENS

SAMPLING & SPECIMEN COLLECTION KITS PROVIDED BY PHL

Specimen Kit Requisition Policy

In some cases, PHL supplies authorized submitters with specimen collection kits. Kits are specific to the type of specimen collected and the type of test being requested.

To order, write to: Washington State Public Health Laboratories
1610 N.E. 150th Street
Shoreline, WA 98155

With the first order, you will receive an order sheet for subsequent use. As the shelf life of supplies and kits is limited, plan to order no more than a month's supply. If you have any questions, please contact the Mail Services:

Telephone (206) 418-5579
Fax (206) 418-5405
Email phl.mailroom@doh.wa.gov

IATA and U.S. Postal regulations require the use of a triple mailing system for submission of cultures and certain other material. When requesting mailing containers, please specify the type of culture (enteric, TB, etc.) so you will receive the appropriate kit and laboratory form. Most of the specimen kits use double mailers. Always wrap the laboratory form around the inner cardboard mailer to avoid contamination if the specimen leaks.

When submitting a bacterial or viral isolate by any means of transportation, the package must be packed in agreement with IATA and USDOT regulations for Infectious Substances. The State Laboratories do not supply the packaging, but materials are commercially available from many sources. See Appendix A for the Federal Regulations which apply to shipping etiologic agents.

Please fill out the laboratory form completely. Telephone numbers have been given for areas of the laboratories. Whenever questions arise regarding specimens or any of the services provided by the State Laboratories, a phone call is welcomed and will often save time and effort. Please print clearly when filling out all paperwork.

Kits are expensive and many have expiration dates. Return all unused and outdated specimen kits and mailing containers to the PHL for recycling. For more information regarding mailing containers, biohazard bags or media, call Mail Services at (206) 418-5579 or fax at (206) 418-5405 or email at phl.mailroom@doh.wa.gov.

Mailing Kits Available

KITS	CONTENTS	REMARKS
Enteric Pathogens - For more information call: (206) 418-5456		
Stool or Rectal	Cary-Blair transport medium, sterile swab, Enteric Bacteriology form and instructions, inside a double cardboard mailer	Use for isolation of enteric pathogens from stools: *Salmonella, Shigella, E. coli, Yersinia, Vibrio* and *Campylobacter.* Use sterile applicator swab to collect specimen, insert swab into Cary-Blair transport medium, break off stick at the score line below lid of bottle, push cap on tightly, seal with pressure-sensitive labeling tape and mail immediately.
Urine (Typhoid Specimens Only)	Buffered Glycerol Saline transport medium (pink solution), Enteric Bacteriology form in a double cardboard mailer	Add amount of specimen equal to volume of transport solution.
Enteric Pathogen Cultures for Identification	Enteric Bacteriology for, double cardboard mailer	For pure cultures only, use screw-cap tubes; do not mail. Petri plates (use courier service). Do not send in liquid media. *Campylobacter jejuni* cultures should be sent on blood or chocolate agar slants in screw-capped tubes. *Salmonella, Shigella* and *Vibrio cholera* confirmation is required by the Washington State Board of Health regulations.
Tuberculosis – For more information call: (206) 418-5473		
Cultures for Identification or Drug Susceptibility Testing	Mycobacteriology form, double cardboard mailer	*M. tuberculosis* confirmation required by state law Ship via Biological substance Category B: Ground, USPS, or Air Transport
Biopsy Material or Swab	Sputum kit, Mycobacteriology form, double cardboard mailer	Keep specimens moist using a small amount of sterile distilled water or sterile saline.
Sputum	Centrifuge tube, Mycobacteriology form, direction, double cardboard mailer, whirl bag and absorbent paper	Single early morning specimens taken on 3 consecutive days (2-3 teaspoons per specimen)
Stool	Centrifuge tube, Mycobacteriology form, and double cardboard mailer	Specimens must be received within 24-hours of collection, notify before shipping
Urine	Centrifuge tube, Mycobacteriology form, and double cardboard mailer	Three single clean-catch early morning specimens taken on consecutive days (30 ml per specimen)
Parasitology – For more information call: (206) 418-5469		
Pinworms	Two (2) tubes with vaspar swabs, Parasitology form, directions, double cardboard mailer	Collect a morning specimen on two successive days before the patient uses the bathroom
Sputum	Sputum in screw-cap tube or bottle with equal quantity of 10% formalin, Parasitology form, double cardboard mailer	For examination for *Paragonimus* eggs or *Strongyloides* larvae
Stool	Para-Pak ULTRA ® ECOFIX ™ Parasitology form, instructions, plastic bag, mailer	The Para-Pak ULTRA ® ECOFIX ™ kit contains a non-formalin based preservative, which is necessary for parasite preservation. Specimens should be placed into this kit as soon as possible after collection. Fresh stool specimens are not accepted without prior arrangements. Observe expiration date on kit.
Urine		For examination of *Schistosoma haematobium* eggs, add 5 ml of 10% formalin to urine after collection. Eggs are most likely to be present in last few drops of urine, especially if urine contains blood or pus. Recommend repeating test 3 consecutive days.

Special Bacteriological Pathogens (Reference) – For more information call: (206) 418-5452		
Bacteriology Culture	Reference Bacteriology for, double cardboard mailer	Viable pure culture. Do not mail Petri plate; use a courier service. A valid attempt to identify the organism is required. Send laboratory results obtained.
Mailing Kits Available		
KITS	**CONTENTS**	**REMARKS**
Special Pathogens Clinical Specimen		See Special Bacteriological Pathogens Section for clinical specimens which will be accepted by the State Laboratories
Legionella Cultures and DFA	Reference Bacteriology Legionella Culture – DFA form, double cardboard mailer	Use a Reference Bacteriology Legionella Culture- DFA form for culture or DFA
Brucellosis, Tularemia	Serology-Bacterial, Fungal, Parasitic form, double cardboard mailer	Febrile agglutination. Acute and convalescent specimens required. Contact the unit before submitting specimens.
Legionnaires' Disease Serology	Serology-Bacterial, Fungal, Parasitic form, double cardboard mailer	Acute and convalescent specimens preferred
Special Respiratory Pathogens – For more information call: (206) 418-5452		
Group A Beta Hemolytic Streptococcus (Strep Kits) Clinical Cultures	Silica gel, Pai slant, swab, Nose and Throat form, double cardboard mailer	Reference cultures accepted
Diphtheria Clinical Specimens, Contact or Case	Two Pai media slants, Nasopharyngeal and throat swabs, Nose and Throat form, double cardboard mailer	Take throat and nasopharyngeal cultures. Notify the Special Respiratory Pathogens unit.
Diphtheria Culture	Nose and Throat form, double cardboard mailer	Confirmation of *C. diphtheria* required by state law
Pertussis	2 swabs for Nasopharyngeal specimens, screw cap tube for PCR sample, charcoal transport media for culture, Nose and Throat forms, immunization history form, directions, double cardboard mailer.	Diagnosis of pertussis requires both culture and PCR swab to be taken. Reference cultures accepted. LHJ approval needed for PCR swab only testing in outbreaks.
Sexually Transmitted Diseases – For more information call: (206) 418-5451		
Gonorrhea Clinical Specimens	Transport media plates with plastic bag and CO_2 tablets, swab, Fluorescence Microscopy form, send per shipping regulations	Incubate the plates at 35° for 48 hours before sending to the State Laboratories.
Reference culture for confirmation	Fluorescence Microscopy form, double cardboard mailer for tubes or cardboard mailer for plates	Submit viable pure culture. Incubate culture 24 hours before mailing.
Virology – For more information call: (206) 418-5458		
Virus Isolation	Viral transport medium, swab, and Virus Examinations form, double cardboard mailer	Call (206) 418-5458 prior to sending samples. Ship in special mailing containers with ice packs. No wet ice.
Herpes (Isolation)	Lab form, VTM and swabs	Specimens accepted only from local health jurisdictions, family planning and planned parenthood organizations.
Respiratory Virus (Isolation)	Viral transport media, 2 swabs, and Virus Examinations form.	Call prior to sending samples for virus isolation. Ship in special mailing containers with ice packs. No wet ice.
Rabies	Rabies Laboratory Report and Animal History form, directions, special bio-transport shipping container and bag, absorbent material, ice packs, outer box labeled as "UN3373, Category B, Biological Substance" with name and phone number of contact person.	Submit animal heads. Ship with ice packs. Send through your local health jurisdiction. Notify Virology Unit before shipping. Pre-approval from Communicable Disease Epidemiology is required.

Virus (Serology)	Virus and Examinations form, double cardboard mailer, directions	Acute and convalescent specimens preferred. Consult unit for single specimen. Pre-approved by CD Epidemiology is required.
Influenza	Laboratory form, VTM and swabs, return box	Accepted from surveillance physicians, nursing homes, all local health jurisdictions, and others pre-approved by Department of Health Communicable Disease Epidemiology.
Mailing Kits Available		
Water Microbiology – For more information call: (206) 418-5489		
Drinking Water Environmental Water Pool or Spa Water	Sterile plastic bottle with sodium thiosulfate, Coliform Bacteria Analysis form, instructions, plastic bag, bubble wrap, mailing container, and return address label. Only kits supplied by PHL or local health jurisdiction will be tested.	Specimen must be in the laboratory within 30 hours after collection. Samples are accepted Monday through Thursday 8 am to 4 pm and Fridays from 8 am to 12 pm. Water Bacteriology kits MUST be prepaid. The fee is $20.00.
Food Bacteriology – For more information call: (206) 418-5442		
Food	No kit provided	Call local health jurisdiction and CD Epidemiology (206) 418-5500, before sending food or specimen.
Stool	No kit provided	Stool must be fresh. Place in sterile container. Do not use transport media. Call local health jurisdiction and CD Epidemiology (206) 418-5500 before sending stool specimen.
Newborn Screening – For more information call: (206) 418-5410		
Newborn	Collection forms, parent information pamphlet, filter paper card, instructions for collection, and a protective envelope for mailing	Follow instructions on back of card
Whole Blood Testing	Dried Blood Hemoglobin form	Collection instruction on form

SPECIMEN COLLECTION

Clinical Specimen Collection

The collection of clinical specimens must follow established laboratory policies and procedures. These policies and procedures must be documented as required by Chapter 246-338 WAC, Medical Test Site Rules, State of Washington Department of Health, Office of Laboratory Quality Assurance. Refer to the table below for general specimen submission instructions. Turn to the submission guidelines of each laboratory unit, e.g. Serology, to which you will be sending the specimen, for specific detailed information.

SPECIMEN SUBMISSION INFORMATION
Blood, Serum or Cerebral Spinal Fluid (CSF)
1. Do not freeze whole blood. 2. Submit specimens in a screw-cap tube sealed with waterproof adhesive tape wound in the direction that tightens the cap. ***If the tube leaks during shipment, we reserve the right not to test the specimen.*** 3. Place tubes in individual plastic zip-top bags. *Do not put the laboratory form in direct contact with the specimen tube.* Use sufficient absorbent material to secure the contents and contain any leakage during shipment. 4. Wrap the laboratory form around the outside of the plastic zip-top bag and secure with rubber bands. Do not include more than four (4) laboratory forms with each inner can. Place the plastic bag and the laboratory form into a cardboard mailing container. Finally, place the cardboard mailing container into a plastic biohazard bag. Note that more than one cardboard container can be placed into the plastic biohazard bags for shipment. 5. Place a mailing address label on the plastic biohazard bag before shipping specimen(s). On the outside of the biohazard bag, please specify the nature of the specimen or contents (UN3373 Biological Substance Category B).
Blood Spots, Dried (Newborn Screening Cards)
1. Use the Newborn Screening Card kits supplied by the PHL. 2. **Air-dry** the specimen at **room temperature** until thoroughly dry (minimum 2 hours). 3. Place specimen into the special envelope provided. 4. Do not enclose in plastic. This will INVALIDATE the specimen. 5. Within 24 hours of collection, submit to the Newborn Screening Laboratory at the address on the front of the envelope.
Cultures:
1. Submit cultures to the PHL in screw-capped tubes only. ***DO NOT*** submit cultures in Petri dishes. All screw caps must be tightly sealed to the tube with waterproof adhesive tape wound in the direction that tightens the cap. 2. Place all culture tubes into plastic zip-top bags, and then package using approved shipping containers. Do not send cultures in office stationery envelopes or other non-approved containers. **Note:** Always follow IATA and USDOT regulations (see Appendix A). 3. ***DO NOT*** send broth cultures unless it is absolutely necessary. Contact the appropriate PHL laboratory unit prior to sending.
Virology Specimens (for isolation, serology or direct antigen testing)
1. Specimens are preferably received in the laboratory within 24 hours of collection. After 24 hours, the viability of viruses will decrease, which may result in the inability to detect virus. 2. All specimens should be shipped cold – NOT FROZEN. However, if frozen already, send on dry ice. Not freeze-thaw. 3. Notify the Virology laboratory when specimens are to be shipped – especially specimens to be shipped on Friday.

Rabies Specimens
1. Animals suspected of having rabies *MUST* be referred to the local health jurisdiction for handling and shipping. 2. The local health jurisdiction notifies PHL CD-Epi of requests for rabies testing. If CD-Epi approves the request, CD-Epi notifies virology.
Specimens to be tested at the Centers for Disease Control and Prevention (CDC)
1. All specimens being shipped to CDC in Atlanta, Ga., must be routed through the PHL. 2. Turn around times for results on these specimens will vary. Contact the individual PHL unit for specific information. 3. A CDC DASH form must be enclosed with each specimen forwarded to the CDC. Please contact the PHL to request CDC DASH forms.

Environmental Samples

The collection of environmental samples must follow established laboratory/field policies and procedures. These policies and procedures must be documented. Refer to the material below for general sample submission instructions. Turn to the submission guidelines of each laboratory unit (i.e. Inorganic Chemistry) to which you will be sending the sample for specific detailed information.

Call us at (206) 418-5400 if you have questions about samples, interpretations, procedures, or any other aspect of Public Health Laboratories services. For public health emergencies after hours, call Communicable Disease Epidemiology at (206) 418-5500.

SUBMISSION PROCEDURES

1. Complete the appropriate laboratory form specific to each PHL laboratory unit. The form must include patient ID, submitter name, mailing address and submitter phone number, and date of collection.

    a. Use *black, non-smearing ink* and please print clearly.
    b. All specimen ID information must correspond with the laboratory form.

2. Include your name, return address, phone number, and date with all specimens, letters memos and requests for laboratory supplies.

3. All specimens submitted to the PHL must have the return address of the submitter and the name of the person requesting the examination.

4. The PHL receives shipments from Greyhound, UPS, Federal Express, and the Unites States Postal Service Monday through Saturday. Call the PHL at (206) 418-5579 before sending samples/specimens.

5. If there is a laboratory fee required for testing, make check or money order payable to the Department of Health and send to the Department of Health, Revenue Section, and PO BOX 1099, OLYMPIA, WA 98507-1099. *Never send your payment with the specimen.*

6. Before sending specimens, make sure there is sufficient postage. The Postal Service will not deliver packages that do not have the required postage. *Do not send specimens*

   Note: Greyhound Express shipments are routinely picked up by PHL staff at about 6:30 am each weekday. To accommodate other bus arrival times (such as emergency and other special arrangements), courier service will be provided for delivery to the PHL by prior arrangement.

During regular business hours, please call the lab units involved to make special arrangements before sending the specimens (See pages 5 – 7).

Hand Delivery

Courier deliveries are received from 7:30 am to 5:00 pm., Monday through Friday. The Public Health Laboratories are closed on weekends and holidays. Special arrangements must be made with laboratory personnel prior to delivery for any high priority items arriving outside the hours of normal operation.

All laboratory samples, specimens, and supplies must be taken to the PHL specimen receiving entrance, near the loading dock at the center of the building. No deliveries are accepted in the reception area at the main entrance. The loading dock is located past the main entrance in the middle of the building, indicated with signage. The glass door to the right of the loading dock has a doorbell for specimen delivery. Ring bell to summon mailroom staff to accept delivery. All delivery persons must have picture identification and will be required to sign the delivery log as shown below.

Specimen Sign-In Sheet							
Date	Time	Company/Courier	# of Pkgs	Sender	Specimen Type	Pick-up time	Employee Name

For questions, or to arrange delivery outside of normal receiving hours, call the appropriate laboratory within PHL.

Important: When submitting specimens in person or by courier, DO NOT leave the packages or specimens outside the building. Unattended items left on the loading dock or outside the receiving door are discarded.

Shipping

Important:
Appropriate regulations for the shipment of infectious materials must be followed when sending specimens to the PHL. In conjunction with appropriate training, the following resources may be used for shipping and mailing regulations:

- International Air Transport Association (IATA) – Dangerous Goods Regulations 46th Ed. (1/1/2005 – 12/31/2005); http://www.iata.org; http://www.iata.org/dangerousgoods/index
- U.S. Postal Service – Domestic Mail Manual Section C023; http://pe.usps.gov/ - Title 39 Code of Federal Regulations Part III
- U.S. Department of Transportation – Title 49 Code of Federal Regulations Parts 171-185; http://www.myregs.com/dotrspa/
- Appendix A of this directory contains more information on shipping requirements including shipping reference tables.

Shipping of diagnostic specimens and infectious materials should be performed or supervised by a person who has received training in the shipping of such materials. *It is the shipper's responsibility to ensure that packages being shipped meet current regulations.* The Code of Federal Regulations can be accessed at http://www.gpoaccess.gov/cfr/index.html. A copy of PHL shipping regulations may be obtained by contacting the PHL mailroom at (206) 418-5579.

Ice packs must be used when submitting specimens in cooler boxes. In this directory, *ice packs* refer to any one or a combination of: gel packs, frozen coolant packs, blue-ice packs, combination water and gel packs, or leak-proof plastic containers. It is important to ensure these products will not leak during shipment. DO NOT use wet ice to transport specimens to the PHL. *Leaking packages will be rejected.*

Instruction for Packing and Shipping Specimens

1. On the primary container label print the patient's complete name or confidential identifier corresponding with the requisition form, the type of specimen collected, and the date specimen was collected.

2. **DO NOT** use ballpoint pens, wax, indelible pencils, or other writing instruments that tend to smear.

3. Enclose a completed laboratory request form with each properly labeled (primary) specimen container.

4. Enclose the specimen in a screw-cap tube or vial with a tight fitting cap. For specimens shipped at ambient or higher temperatures, positive means of ensuring a leak-proof seal must be used, such as a skirted stopper, or metal crimp seal. If screw caps are used seal the cap with waterproof adhesive tape wound in the direction that tightens the cap.

5. Package specimens properly for transit (Figure 1, page 23) ensuring that personnel who handle the package will not come into contact with the enclosed specimen.

6. Place the tube or vial (primary container) in a watertight secondary container. Pack a suitable absorbent material around the tube to absorb shock and possible leakage of entire contents. If several tubes are to be packed within the same can, wrap each tube individually in absorbent material. ***DO NOT*** place the request form within the secondary container; wrap it around the outside of the secondary container.

7. Place the secondary container into an outer shipping container. Seal the outer shipping container according to directions; affix a properly completed address label, include the name and phone number of the responsible contact person with a return address and postage, if required.

8. If specimens must be sent refrigerated or frozen, they should be packaged in a certified insulated container. The insulated container should be placed within a properly labeled certified container and sealed according to manufacturer's instructions. The specimens should be packaged in a manner that prevents movement within the insulated container.

9. Try to time shipments (when possible) to arrive early in the week. Be particularly careful to avoid having the specimen arrive on a weekend or a holiday when possible. Call the PHL 24-hour number if shipments will be received outside of normal business hours. The 24-hour numbers are (206) 418-5500 and (877) 539-4344.

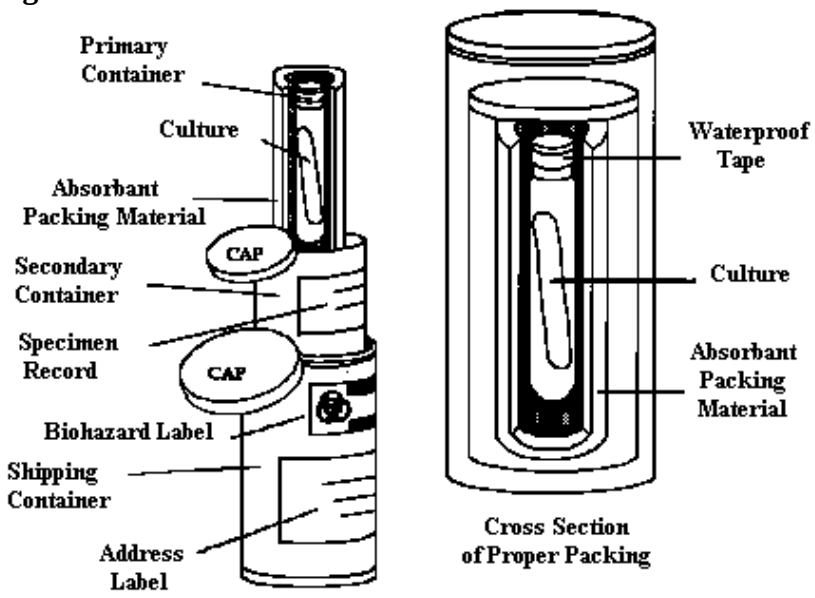
10. **NEVER** mail any clinical specimens or cultures in Petri dishes.

11. Improperly packaged specimens and specimens that have leaked may not be accepted.

12. A specimen arriving with an incomplete or no request form may be held until the information is received. The proper request form for each specimen submitted must be completed as fully as possible. When possible, include patient name or confidential ID, date of specimen collection, type of specimen, birth date or age, sex date of onset, diagnosis, symptoms, attending physician, county of residence, suspected agent, reference culture information including type of medium and source of isolate, and other pertinent medical information including contact with insects animals, etc., antibiotic or anti-tuberculosis therapies, recent vaccinations, similar infections in the family or community, and recent travel including destination and dates.

13. Copies of the reports are mailed only to the source indicated on the request form. Be sure to include the full 9-digit zip code for each address.

Figure 1



***42 CFR, Par 72**
CDC Instructions
Reference & Disease Surveillance
Center for Infectious Diseases, Feb. 1986
Office of Biosafety, Centers for Disease Control
Atlanta, GA 30333

Confidentiality

The Public Health Laboratories (PHL) places a very strong emphasis on protection of confidential data. The PHL also places a similar emphasis on providing timely results. In an attempt to ensure that these goals are met, the PHL requests that providers sign and return a Fax Confidentiality Statement stating that the receiving fax machine at the provider's facility is in a secure location and that only authorized personnel have access to faxed information. A sample of the Confidentiality Notice that will accompany each fax is provided below.

Fax Cover Sheet – Confidentiality Notice

WASHINGTON STATE DEPARTMENT OF HEALTH
PUBLIC HEALTH LABORATORIES
1610 N.E. 150th Street
P.O. Box 550501
Shoreline, WA 98155-9701

Phone (206) 418-5400 Fax (206) 418-5445

FAX COVER SHEET

CONFIDENTIALITY NOTICE

This facsimile transmission and the documents accompanying it are private and confidential. The information contained in these documents is protected by disclosure laws and is intended solely for the use of the individual(s) or entity(ies) named below. If you are not the intended recipient, you are hereby notified that any unauthorized use, disclosure, copying, distribution, or other action taken, based on the contents of this telecopied information, is strictly prohibited. If you have received this transmission in error, please notify us immediately by telephone to arrange for return of the document(s).

This message is being transmitted from the Public Health Laboratories. If this message is incomplete or illegible, please call (206) 418-5400.

TO: _____

DATE:_____ **TIME:** _____

FAX NO. (_____) _____-_____ **PHONE NO.** (_____) _____-_____

FROM: _____

_____

_____

Number of pages, including cover sheet:_____

MESSAGE:

OFFICE OF ENVIRONMENTAL LABORATORY SCIENCES

This office provides testing services or microbiological, chemical and radiological analyses of drinking water and a wide variety of environmental sample types, including food and shellfish, in order to determine any potentially harmful health effects from the environment or environmental contamination.

This unit, in support of the Department of Health programs, performs the majority of the chemical analyses. The Department of Ecology, the Department of Agriculture, local health jurisdictions and private citizens utilize these laboratory services as well.

The laboratories of this office serve as the reference laboratories for bacteriological and radiological tests in drinking water, food pathogens, and Parasitology in support of state environmental health programs.

To confirm the ability of the laboratories to perform analysis and serve as a reference facility, the laboratories participate in proficiency testing sponsored by the Federal Food and Drug Administration (FDA), College of American Pathologists (CAP), Centers for Disease Control and Prevention (CDC, Federal Department of Energy's Quality Assessment Programs (QAP), Department of Ecology (DOE), Mixed Analysis Performance Evaluation Program (MAPEP), and activities of the Northwest Regional Quality Assurance Task Force. The laboratories also use private laboratories certified by NIST as proficiency test providers.

Laboratory Response Network – Chemical Event Response Lab

The unit provides testing services of human blood and urine specimens for heavy metals, cyanide, toxic and volatile organic chemicals (VOCs) in support of the Washington State Emergency Preparedness and Response program. Services are provided ONLY to local, state and federal health jurisdictions and law enforcement. State-of-the-art instrumentation and methods are used to identify and quantify exposure levels. The testing methodology varies according to the origin of the specimen and the type of chemical agent suspected or known to be involved.

Specimen collection information is available by contacting (360) 236-3387 or (360) 709-4203 in an emergency.

CHEMICAL AGENTS SURVEILLANCE				
Collection and Submission Instructions				
Agent	Specimen	Required Notification of Shipment	Transport Temperature	Remarks
Suspected Chemical Agent Exposure	Blood	Call (206) 418-5476 or (206) 418-5400.	Refrigerate at 4◦C	Prior approval by CT Response Unit required: (360) 236-3387 or (206) 418-5476. Ship promptly. Notify CT Response Unit at when and how specimens are being shipped.
Suspected Chemical Agent Exposure	Urine	Call (206) 418-5476 or (206) 418-5400.	Flash freeze at 70◦C or on dry ice and keep frozen at -20◦C or colder	Prior approval by CT Response Unit required (360) 236-3387 or (206) 418-5476. Ship promptly. Notify CT Response Unit at when and how specimens are being shipped.

Turnaround Times
Turnaround times vary by sample/specimen type and analysis performed. Contact the Office of Environmental Services for specific information.

FOOD MICROBIOLOGY

The Food Microbiology unit examines specimens from suspect foodborne illness episodes to determine sanitary quality and to isolate and identify possible etiological agent(s). *Contact the CD Epidemiology Section and the Food Unit prior to specimens being shipped (206) 418-5500.*

Turnaround Times (working days):

Food .....7 – 14 days*
Environmental.....7 – 14 days*
Stools & Vomitus.....7 – 14 days**

**Listeria* testing takes up to 30 days to complete.
** Vomit must be neutralized within 1 hour of discharge (release) (episode)

Food Testing Guidelines

The Washington State Department of Health (WDOH) Public Health Laboratories (PHL) provides diagnostic services that include food microbiology. As a general rule, two categories of food testing are performed at the PHL:

A. Food Safety Testing

The Food Microbiology Laboratory conducts food safety testing at the request of local health jurisdictions based on inspections or complaints. Tests to determine water activity, pH levels, standard plate counts, coliform counts, and fecal coliform counts are performed. Approval from Food Microbiology staff (206-418-5442) must be obtained before specimens are submitted for food safety testing.

B. Testing for etiological agents of public health and epidemiological concern

In general, food tests for etiological agents of public health and epidemiological concern at the PHL are conducted *in outbreak* situations only **and** only after human specimens have been analyzed with positive results.* If, in an outbreak situation, there is leftover food, it is always advisable to collect food samples and hold them in case laboratory testing of food by the PHL is warranted. **Food samples should not be submitted to the PHL without the approval of Communicable Disease Epidemiology (CDE).** Call 206-418-5500 (24-hour telephone number) if you would like to discuss food testing with CDE staff. Any exception to the outbreak/confirmed clinical results criteria must be approved by CDE staff. Food will not be accepted or tested for etiological agents without CDE approval.

A Foodborne outbreak is defined as an incident in which: (a) two or more persons experience a similar illness, usually gastrointestinal, after ingestion of a common food, **AND (b) epidemiologic evidence and/or laboratory testing evidence implicate a common food as the source of the illness. A single case of botulism always warrants food testing.*

Samples must be clearly and completely identified. Include a PHL Food Specimen form with **each** sample. Forms can be obtained by calling the PHL Mailroom at (206) 418-5579. The following information is considered necessary:

- Name and address of submitting organization
- Sample description
- Collector's name
- Name and address of the manufacturer
- Lot number
- Dealer or distributor
- Date, place, time of collection
- The reason for testing

In general, leave the food sample in the original container if available. Give each sample a securely attached label. Keep frozen if frozen. Keep cold if the sample is already refrigerated or if the sample is at risk of spoiling during shipment, otherwise ship at ambient temperature.

Guidelines for Submitting Food/Food-Related Specimens to the WDOH PHL

AGENT/DISEASE	SPECIMEN & QUANTITY	COLLECTION TIME	TRANSPORT CONTAINER	REMARKS
Bacillus cereus	Stool – Walnut-size (50 gm)	At onset/or ASAP	Clean container or cup; keep cold, no transport media.	Isolation from stool alone does not confirm food borne illness. Testing is meaningful only if there is isolation from a food sample also.
	Food - 100 gm (1/4 lb)	At onset/or ASAP	Clean container, keep cold.	
Clostridium perfringens	Stool – Walnut-size (50 gm).	At onset/or ASAP	Clean cup or container, refrigerate, and keep cold, no transport media.	Isolation from stool alone does not confirm food borne illness. Testing is meaningful only if there is isolation from a food sample also.
	Food – 100 gm (1/4 lb).	At onset/or ASAP	Clean container, keep cold (10◦C). Temperature is critical, rapid die-off of vegetative cells occurs below 10◦C, spores are unaffected.	
Clostridium botulinum	Food – food remnants, washed/unwashed food container.	At onset/or ASAP	Do not freeze. Ship food and food remnants in clean, leak-proof container; place in plastic bag (with absorbent material), then in an insulated shipping container. Ship cold with ice pack.	Notify Special Bacteriological Pathogens Unit (206-418-5452). For all *Clostridium botulinum* specimens, prior approval by WDOH Communicable Disease Epidemiology is required. Call (206) 418-5500, 24-hours.
	Serum – 10 to 15 ml.	Collect soon after onset of symptoms and before antitoxin is given	Place specimen in a clean, leak-proof container; place in plastic bag, then in an insulated shipping container. Ship cold.	
	Vomitus – 10 to 15 ml.	At onset/or ASAP	Ship same as serum.	
	Gastric material – Walnut-size (50 gm).	At onset/or ASAP	Ship same as serum	
	Stool – 10 to 50 gm. Enema material is	At onset/or ASAP	Ship same as serum	

	acceptable. Obtain specimen from sterile (non-bacteriostatic) water enema. A volume of 20 ml collected after enema is sufficient.			
Escherichia coli O157:H7, other enterohemorrhagic strains of *E. coli*	Stool – Swab coated with stool specimen or rectal swab.	At onset/or ASAP	Cary-Blair transport media sent in double mailer.	Send isolate to the PHL Enteric laboratory.
	Food – 100 gm (1/4 lb).	At onset/or ASAP	Sterile container, keep cold.	
Salmonella	Stool – Swab coated with stool specimen or rectal swab.	At onset/or ASAP	Cary-Blair transport media sent in double mailer.	Send to Enteric lab (206-418-5456).
	Food – 100 gm (1/4 lb).	At onset/or ASAP	Clean container, keep cold.	
	Drinking water – one gallon.	During outbreak	Clean jar, keep cold.	
	Environmental swabs.	At onset/or ASAP	Ambient temperature.	Contact and transport directly to Food Microbiology unit.
Shigella	Stool – Swab coated with stool specimen or rectal swab.	At onset/or ASAP	Cary-Blair transport media sent in double mailer.	Sent to Enteric Lab (206-418-5456)
	Food – 100gm (1/4 lb)	At onset/or ASAP	Clean container, keep cold.	Organism is difficult to isolate from food.
Staphylococcus aureus	Stool – Walnut-sized (50 gm).	At onset/or ASAP	Clean container, keep cold.	Isolation from stool alone does not confirm Foodborne illness. Testing is meaningful only if there is isolation from a food sample also.
	Food – 100 gm (1/4 lb)	At onset/or ASAP	Clean container, keep cold.	Interpretation of the results depends on type of food and food handling.
	Enterotoxin studies/Food – minimum 100 gm (+100 gm above).	At onset/or ASAP	Clean container, keep frozen.	Sent to FDA
	Vomitus – Check pH when collected. Neutralize with sodium hydroxide or baking soda, if	During symptoms	Clean container, keep cold.	Must neutralize (pH) immediately after collection and must be received in Food Microbiology unit

	necessary.			within a few hours after collection.
Parasites	Stool – Walnut size.	At onset	Use Ova & Parasite kit. Contact PHL Mailroom for kit (206-418-5579).	Consult with Communicable Disease Epidemiology (206-418-5500)
	Food – Currently (2/2006) food is not tested for parasites at the PHL.			Consult with Food Microbiologist, (206-418-5442)
Vibrio parahaemolyticus	Stool – Swab coated with stool specimen or rectal swab.	At onset/or ASAP	Cary-Blair transport media sent in double mailer.	Specify test on Enteric form.
	Food – 100 gm (1/4 lb).	At onset/or ASAP	Clean container, keep cold.	Do not put food directly on ice pack. Insulate with newspaper.
Viral (Norovirus)	Food – currently (2/2006) food is not tested for viruses at the PHL.			
Chemical	No food or stool testing.			Consult with CD Epidemiology, (206-418-5500)
Other Tests: Water Activity pH	Food – 100 gm (1/4 lb).	No priority	Clean container	Ambient temperature, or if cold, keep cold.
	Food – 100 gm (1/4 lb)	At onset/or ASAP	Clean container	Ambient temperature, or if cold, keep cold.

1. Food samples should be kept cold, but not frozen, during shipment. A Styrofoam cooler with ice packs is recommended for protecting the sample during the shipping process.
2. Food samples must be protected from direct contact with the ice. Placing insulation between the sample and the ice pack will provide protection. Newspaper, bubble wrap, or other padding material can be used for insulation.
3. Samples should be transported to the laboratory as soon as possible for best results. Samples may be shipped via Greyhound bus, FedEx, UPS Express or hand delivered immediately after collection.
4. Food samples are accepted Monday through Friday from 7:30 am to 5:00 pm. Special deliveries on Saturday can be prearranged by contacting the food laboratory at (206) 418-5442.

INORGANIC CHEMISTRY

Tests in this unit fulfill the requirements of the Environmental Protection Agency (EPA) and Washington State Drinking Water Standards for Inorganic Compounds (IOC). Types of tests offered include:

REGULATED INORGANIC CHEMICALS		
Primary Chemicals (EPA)		
Antimony	Chromium	Nitrate
Arsenic	Mercury	Nitrate
Barium	Nickel	Selenium
Beryllium	Cyanide	Sodium
Cadmium	Fluoride	Thallium
Secondary Chemicals (EPA)		
Chloride	Manganese	Sulfate
Iron	Silver	Zinc
Complete Inorganic Test Chemicals (in addition to all listed above) (WA)		
Color	Hardness	Turbidity
Conductivity	Total Dissolved Solids	
Lead and Copper Rule (EPA)		
Copper		
Lead		

The "complete inorganic chemistry analysis" includes the parameters required by the EPA and the State of Washington. Detailed EPA and Washington State requirements are available from the Department of Health, Office of Drinking Water, within the Division of Environmental Health Programs, at (360) 236-3100.

The Inorganic Chemistry Unit can analyze for each of these items individually or as part of a total test package. EPA regulations require that all items marked in the Primary Chemicals list above be tested when meeting the requirements of a complete inorganic test. Washington State regulations may require the tests indicated in order to meet the requirement of a complete inorganic test.

The unit also tests for aluminum, cobalt, molybdenum, strontium, titanium, vanadium, and for the parameters of alkalinity, silica, residual chlorine, surfactants (MBAS), phosphates, ammonia, bromate, chlorate, chlorite, and bromide in water as well as lead in blood.

Sample container and information kits are available by calling (206) 418-5492. This laboratory also performs lead tests in blood.

Turnaround Times

IOC – Complete .....4-6 weeks
Metals.....4 weeks
Incomplete – Primary.....4 weeks
Nitrates.....2 weeks
Fluorides .....2 -3 weeks
Lead in Blood.....1 – 5 days

KITS AVAILABLE DIRECTLY FROM THE TESTING LABORATORIES		
KITS	**CONTENTS**	**REMARKS**
Inorganic Chemistry – For more information call: (206) 418-5492 for fee/kit information		
Complete Inorganic Chemicals in Water	Two 1-quart containers, mailing container, form, ice pack	As required for compliance with federal and state regulations. Special parameters or groups of tests available. Must use container provided.
Fluorides in Water	125-ml bottle, mailing container, form	
Nitrate in Water	60 ml (2oz) ice pack, form, bottle, mailing container	
Lead in Water		Call for fee and/or kit information

INORGANIC CHEMISTRY (IOC)

Collection and Submission Instructions

TEST	TRANSPORT CONTAINER	STORAGE TEMPERATURE	ANALYSIS TIME	SAMPLING & MAILING DAYS	SAMPLE LOCATION	RESULTS
Complete IOC Drinking Water	Two 1-quart Cubitainers per sampling point/source, ice pack, styrofoam mailing container	Refrigeration at 4°C	48 hours for NO_2 and NO_3 tests	Monday - Wednesday Mail within 8 hrs of collection. Sample must be in lab within 24 hrs & received by Thursday.	Closest to source before tanks and/or treatment	Monday - Friday
Incomplete IOC Primary	Same as above	Same as above	Same as above	Same as above	Same as above	Monday - Friday
Metals	One 1-qt acid-rinsed Cubitainer	Acidify (1% HNO_3 upon receipt)	6 weeks	Monday – Friday	Same as above, but if testing for lead or other metals leaching from plumbing, take sample 1st	Monday - Friday

INORGANIC CHEMISTRY (IOC)						
Collection and Submission Instructions						
TEST	**TRANSPORT CONTAINER**	**STORAGE TEMPERATURE**	**ANALYSIS TIME**	**SAMPLING & MAILING DAYS**	**SAMPLE LOCATION**	**RESULTS**
					thing in AM, from COLD tap. Do not flush the system.	
Nitrates / Nitrites	One 2-oz (60 ml) polypropylene bottle, ice pack, styrofoam mailing container	Refrigerate at 4°C	2 weeks	Monday – Wednesday	Closest to source; before tank &/or treatment	Thursdays
Fluorides	One 4-oz (125 ml) polypropylene bottle	Ambient	48 hours for non-chlorinated water 14 days for chlorinated water	Monday – Friday	Same as above. For fluoridated systems, AFTER fluoridation	Fridays
Lead and other trace metals in Blood	Royal blue top (trace metal) Vacutainers	Refrigerate upon receipt		**CALL AHEAD** - Performed on a restricted basis. Submitter must supply container. See Specimen Collection section of this manual for blood.		
Others - Without Metals	One 1-qt Cubitainer	Check with Lab for details	Check with Lab for details	Monday - Wednesday	Closest to source; before tank &/or treatment	Monday - Friday

MARINE BIOTOXINS

The Marine Biotoxins Laboratory tests shellfish for Paralytic Shellfish Poisoning (PSP) and Domoic Acid, sometimes referred to as Amnesic Shellfish Poisoning (ASP) toxins, in support of the State of Washington Office of Shellfish and Water Protection Program. The office of this program in Olympia (360) 236-3330 arranges collection of samples for PSP or Domoic Acid analysis. Questions regarding sample collection, submission form, and shipment should be directed to this office as well.

Shellfish Related Illness

Questions concerning illness associated with eating shellfish should be directed either to the local health jurisdiction or to the Office of Shellfish and Water Protection Programs, (360) 236-3330, or to Communicable Disease Epidemiology, (206) 418-5500.

PARASITOLOGY

The Parasitology Laboratory provides clinical laboratory service **ONLY** to local health jurisdictions. This unit, however, serves as a reference laboratory for all laboratories within the state.

Reference services are available from the Centers for Disease Control and Prevention (CDC) for serology and identification of unusual parasites. If a parasitic disease is suspected from a symptomatic patient who has traveled in endemic areas, please contact the Parasitology Unit for specific instructions.

Turnaround Times

Reference, Gross, Ova Parasites Specimens.....2 – 5 days

Note: In events where further identification is needed, turnaround times will vary.

PARASITOLOGY						
Collection and Submission Instructions						
AGENT	**SPECIMEN**	**COLLECTION TIME**	**TRANSPORT CONTAINER**	**TRANSPORT TEMP**	**STORAGE TEMP**	**REMARKS**
Arthropods	Suspected of causing human illness		Bottle containing 10% buffered formalin	Ambient	Ambient	*Ship in double cardboard mailer
Blood Parasites	Thick & thin blood smear stained	During fever and chills	Slide mailer and protective packaging (bubble wrap or peanuts)	Ambient	Ambient	Fix and stain slides immediately
Gross Parasites	Suspected parasite		Bottle containing 10% buffered formalin	Ambient	Ambient	Gross parasites from human patients only, wash adult worms free of stool, ship*.
Pinworms	Anal swab	Two successive mornings	Two Vaspar coated swabs in tubes	Ambient	Ambient	Brush swab lightly over anal area, then insert ¼ inch into anal canal, place swab in tube, ship*.
Protozoan cysts and Trophozoite	Fresh walnut-sized stool (50 gm)	Every other day for three collections or three over a 10-day period	Para Pac ULTRA ECOFIX or one tube with 10% formalin,	Ambient	Ambient	Make sure the patient adds enough stool specimen to the collection kit to reach the red line marked

PARASITOLOGY

Collection and Submission Instructions

AGENT	SPECIMEN	COLLECTION TIME	TRANSPORT CONTAINER	TRANSPORT TEMP	STORAGE TEMP	REMARKS
Helminth Ova			one tube with PVA			on the outside of the tube. Mix well. Use PHL collection kit for specimen and ship*.

RADIATION

Drinking Water Sample Analysis

The Radiation Unit is certified by the Environmental Protection Agency for testing of drinking water using the following methods:

	EPA Method Code
Gross Alpha & Gross Beta	900
Photon Emitters (including Iodine 131)	901
Radium-226	903
Strontium – 89 & Strontium – 90	905
Tritium	906
Natural Uranium	908
Radium – 228	In-house procedures

This unit also performs radon analysis for drinking water.

All other Sample Types

The unit is capable of providing radiochemical analysis of almost any sample type. The laboratory routinely tests soils, sediments, shellfish, fish, meat, sludge, mill tailings, milk, water, air, vegetation, and food products.

Turnaround Times

Wipes	Per customer request. Can be as quick as 24 hours.
Gross Alpha/Beta in Air	3 weeks
Gross Alpha/Beta in Water	4 weeks
Radium in Water	6 weeks
Radon	1 week
Uranium in Water	2 weeks
Uranium in Soil	4 weeks
Gamma in Milk, Water, Food, or Air	2 weeks
Gamma in Soil	4 weeks

Strontium in Water or Milk.....5 weeks
Strontium in Air, Food, or Soil.....8 weeks
Plutonium in Water.....3 weeks
Plutonium in Soil, Food.....4 weeks

The unit can meet quicker response times if necessary. Coordination of an increased priority will be made with all the programs that the laboratory supports. This is necessary, since for one set of samples to have a priority, another set of samples will likely experience an increase in turnaround times.

Collection and Submission Instructions

The unit provides sample container and sampling information kits. For kit inquiries, call (206) 418-5486. The submitter will need to furnish all the information requested on the laboratory forms that are provided with the kits.

Radiation Chemistry - For more information call: (206) 418-5498		
Water	Container depends on type of chemical tests requested	Contact the Radiation Chemistry Unit at (206) 418-5484. Testing as required by the Federal Safe Drinking Water Act.
Environmental Samples [Other than Safe Drinking Water Act (SDWA) samples]		Contact the number listed above for detailed information

WATER MICROBIOLOGY

The Water Microbiology Laboratory serves as Primacy Laboratory and training resource for Washington State Department of Health Drinking Water and Food Safety and Water Protection programs. The unit performs EPA and FDA approved methods in the interest of maintaining safe drinking water supplies and environmental waters related to shellfish harvesting throughout the Puget Sound and along the Washington coast.

Drinking Water Microbiology

The Water Microbiology Laboratory is the Primacy Lab for Washington State and is certified by EPA to conduct approved methods for Coliform Bacteria analyses. The laboratory rotates through the methods listed below on a monthly basis to provide expertise in all methods. Please make arrangements and consult with the Water Microbiology staff at (206) 418-5489 to request a specific method of testing, if you are planning to submit over 10 samples in one day, or if you have any questions. The types of samples accepted include:

METHODOLOGY LIST BY REGULATION	
Total Coliform Rule (Total Coliforms and Fecal Coliforms or *E.coli*)	**Surface Water Treatment Rule** (Total Coliforms, Fecal Coliforms, and Heterotrophic Bacteria)
Chromogenic/Fluorogenic Methods (Colilert and Colisure)	Membrane Filter (MF)
Membrane Filter (MF)	Multiple Tube Fermentation (MTF)
Multiple Tube Fermentation (MTF)	Heterotrophic Plate Count (HPC)
Single Volume Fermentation (PA)	Chromogenic/Fluorogenic Methods (Colilert and Colisure)

Drinking Water Bacteriology Kits

Drinking water microbiology kits are available for a fee of $20 each and must be purchased in advance of sample collection. The fee includes the kit and the analysis. The drinking water sample collection kit includes a special sampling bottle, laboratory form with instructions, mailing container, and plastic bag. Kits can be purchased in person or by mail using a check or money order. Please contact the billing department regarding the purchase of sample collection kits at (206) 418-5400.

Sample Requirements

1. Routine drinking water samples must be less than 30 hours old when received in the laboratory for testing. Samples exceeding the 30 hour time limit upon receipt become unsuitable and will not be tested.

2. Samples for routine testing are accepted Monday through Thursday from 7:00 am to 4:00 pm, and on Friday from 7:00 am until noon.

3. Raw source waters, pool or spas and special requests for Heterotrophic Plate Count (HPC) testing must be less than 8 hours old when received in the laboratory for testing. Samples received after 8 hours will be tested but may produce invalid results. HPC requests are accepted Monday through Thursday from 7:00 am to 12 noon.

Submission of Drinking Water Samples

1. Use only the special sample collection kits furnished by the Public Health Laboratories.

2. The sample information form included in a sample collection kit must be filled out completely and legibly in accordance with the instructions printed on the back of the form.

3. It is recommended that drinking water samples be kept cold, but not frozen, during shipment. Use of blue ice packs with some insulation between the sample and the ice pack (i.e., newspaper, bubble wrap, etc.) is recommended.

4. Samples must be less than 30 hours old when received in the laboratory for testing. Note: For raw source water or HPC test requests, samples must be received in the water lab within 8 hours of collection.

5. Samples may be mailed (FedEx, UPS Express, USPS Priority) or hand delivered immediately after collection.

6. Routine drinking water samples are accepted Monday through Thursday from 7:00 am to 4:00 pm and on Friday from 7:00 am until 12 noon (within 30 hours of collection).

7. Raw source waters, pools or spas, and HPC requests are accepted Monday through Thursday from 7:00 am to 12 noon (within 8 hours of collection).

Turnaround Times

Results.....1 – 7 business days

Marine Water Microbiology

Marine water testing requests related to the monitoring of shellfish growing areas must be coordinated through the Food Safety and Shellfish Program (360) 236-3319. Recirculating water testing related to the exportation of shellfish goods is also available for a fee of $21 per test. Prior arrangements must be coordinated through the Food Safety and Shellfish Inspection Program lead, (360) 236-3313.

The following is a list of Marine Water Microbiology testing available:

- Growing Area Survey and Classification
- Fecal Coliform (MTF)
- Total Coliform and Fecal Coliforms (MTF)
- Wet Storage (Recirculating Water Systems)

Submission of Marine Water or Recirculating Water Samples

1. All samples must be co-coordinated through the Food Safety and Water Protection prior to submission.

2. Use only those water bottles furnished by the Water Microbiology Laboratory or the Food Safety and Shellfish Program.

3. Survey form(s) must be filled out completely and submitted with samples.

4. All Marine Water or Recirculating Water samples must be shipped cold, but not frozen.

5. A temperature control bottle labeled "TC" must be included in each box of samples to verify holding temperatures remain between 0-10◦C during shipment. Samples with temperature control bottles greater than 10◦C are unsuitable and will not be tested.

6. Samples must be less than 30 hours old when received in the laboratory. Samples over 30 hours old are unsuitable and will not be tested.

Turnaround Times

Results.....1 – 7 business days

Recirculating Water Billing

Process Water Billing invoices are prepared monthly. Please contact the Accounting Department with inquiries regarding Process Water testing.

Accounting Department
Public Health Laboratories
1610 N.E. 150th Street
Shoreline, WA 98155-9701
(206) 418-5489

Other Water Microbiology Testing

Sterilization Monitor Test

The Water Microbiology Laboratory processes Sterilization Monitor tests to determine the effectiveness of steam, dry heat, and gas (ethylene oxide) sterilization. The submitter must obtain biological sterility indicators. A fee of $10 is charged for each test set; two tests and one positive control. Contact Water Microbiology personnel with inquiries regarding Sterilization Monitor tests (206) 418-5489.

WATER MICROBIOLOGY

Collection and Submission Instructions

Tests	Samples	Collection	Transport Container	Storage Temperature	Remarks
Drinking Water Samples for Total Coliforms, Fecal Coliforms or *E.coli*	120 ml of Drinking Water, Raw Source Water, Pools or Spas	Location of interest (sites which are representative of water quality throughout the distribution system)	Recommended submission of sample bottles in Styrofoam container with ice packs. Sample information forms are recommended	Cold shipment of 0-10 °C is recommended. Ship immediately. Do not store. Drinking water must be less than 30 hours old when received. Raw source water and pools or spa sample	Coliform tests use MTF, MF, Enzyme Substrate and P/A techniques appropriate to the type of sample. Include any special instructions with sample. Fecal coliform or Ecoli

WATER MICROBIOLOGY

Collection and Submission Instructions

Tests	Samples	Collection	Transport Container	Storage Temperature	Remarks
			to be packaged in a watertight bag along with samples.	must be received in less than 8 hours.	tests will be provided on all samples tested for total coli forms. Prevent samples from becoming submerged in melted ice.
Heterotrophic Plate Count	120 ml of Drinking Water, Raw Source Water, and Pools or Spas	Location of interest	Recommended submission of sample bottles in Styrofoam container with ice packs. Sample information forms are recommended to be packaged in a watertight bag along with samples.	Do not store. Ship immediately. Sample must be received in less than 8 hours.	Provided for all swimming areas. Also provided for other samples upon request. Prevent samples from becoming submerged in melted ice.
Marine Water and/or Recirculating Water Systems (RWS) for Total Coliforms, Fecal Coliforms.	120 ml of Marine Water or Process Water	Location of interest	Submit sample bottles in styrofoam container with ice or ice packs. Survey forms should be packaged in a watertight bag along with samples.	Sample must be cold but not frozen. Maintain 0-10°C. Do not store. Ship immediately. Marine Water and Recirculating Water Systems (RWS) must be less than 30 hours old when received.	Prevent samples from becoming submerged in melted ice. Submit a Temperature Control blank marked "TC" with each package. Ecoli forms provided upon request.
Biological Sterility Indicators	Spore Strip or Ampoule	Autoclave, dry heat, or gas (Ethylene Oxide) sterilization	If liquid, wrap in absorbent material. Place tests in plastic watertight bag, ship samples and form in accordance with shipping regulations.	Ambient	Process in conjunction with a normal sterilizing run. Follow manufacturer's instructions. A $10 fee is charged for testing. The submitter must obtain Biological Sterility Indicators.

Special Tests

Special tests include: Microscopic Examinations, *Pseudomonas*. Consult with the Water Microbiology Laboratory for information regarding special testing in drinking water or water quality cases. For illness related cases, contact epidemiology for specific information regarding special testing.

OFFICE OF LABORATORY OPERATIONS AND TECHNICAL SUPPORT

This office provides internal technical and operational support to the State Public Health Laboratories. Included within the office are, Technology Transfer, Media and Glassware Preparation, Mail Services, Fiscal Management, Instrument Maintenance and Facilities Maintenance.

Central Services
Mailroom
Media Preparation
Glassware Preparation
Specimen Kit Preparation
Shipping and Receiving

Technology Transfer
Laboratory Training
Meetings & Conferences

Maintenance
Building and Grounds
Motor Pool
Security

Consultation from these areas is offered to local public and private health facilities. Areas of expertise include laboratory training, maintenance of laboratory equipment, facilities management, specimen handling, preparation of culture media, and shipping regulations.

This office provides all the kits and containers used to deliver specimens to the State Laboratories, and they are responsible for the kit contents, the quality control and the shipping. During outbreaks of disease, laboratory support from this unit is coordinated with the efforts of local health officers, physicians, and state epidemiologists.

PHL Mailroom

The PHL mailroom receives all mail, samples and specimens that are sent to the PHL. This unit is also responsible for preparing and supplying kits for many of the tests performed at the PHL. See section on ***Collection and Submission Instructions*** for details on submitting samples or specimens to the PHL.

PHL Maintenance

The maintenance department is responsible for the upkeep of the PHL building and grounds, care of the cars in the motor pool, oversight on preventative maintenance of laboratory equipment, meeting room setup, building security, and janitorial services.

Glassware and Media Preparation

This department makes almost all of the media used by the PHL testing units, and is responsible for laboratory glassware preparation, laboratory waste disposal and many other support functions that allow the testing units to continue with their work.

QUALITY MANAGEMENT AND SAFETY PROGRAM

This section consists of a *Quality Assurance & Safety Officer* who is responsible for the quality assurance and safety programs within the Public Health Laboratories. The *Quality Assurance & Safety Officer* also directs the activities of the Quality Assurance Committee and the Safety and Emergency Response Committee (SERC). These committees are composed of volunteer staff members from every office and program that is located at the Public Health Laboratories (PHL). This position is the reference person for safety and quality assurance related items.

PHL Quality Assurance Program

The section coordinates the laboratory's compliance with all accreditation, proficiency and qualification regulations mandated by federal and state agencies, OSHA, EPA, HCFE, FDE, USDA, the DOE and the Washington State Medical Test Site rules. Additional QA functions performed by the Safety & QA Officer include:

- Coordinate the various subscribed or inter-laboratory proficiency testing programs.
- Maintain the quality assurance plan and consults with the laboratory's client groups.
- Research and resolves client complaints.
- Prepare for on-site inspections by internal or external groups that certify or accredit the Public Health Laboratory.
- Coordinate external College of American Pathologists, (CAP), and inspection of other laboratories per CAP licensing requirements.
- Facilitate the performance of pipette, thermometer, and weights calibration checks.
- Recommend employee training as required for the facility.

PHL Safety Program

The Safety & Quality Assurance Officer confers with and advises the laboratory director, managers, supervisors and employees on occupational safety and health issues. Plans, organizes and directs the laboratory's Safety and Health program to comply with OSHA, WISHA, IMR, the fire marshal and other applicable federal, state and local codes. Conducts accident investigations, inspections, and recommends proper corrective or preventive actions. Additional safety functions performed by the Safety & QA Officer:

- Collaborate with the DOH risk management group, maintains, and updates the laboratory Chemical Hygiene Plan as required by WAC 296-62-400 and the other laboratory safety manuals and plans.

- Coordinates the development of the PHL Disaster Response Plan, Emergency Response Plan and Evacuation Plan/Procedures in alignment with the departmental plans.

- Investigate employee industrial and vehicular accidents.

- Coordinate claims and reports with the DOH Risk Manager.

- Conduct local facility/laboratory industrial safety inspections.

- Manage the Occupational Medicine Program for the PHL. (Schedule immunizations, blood draws, etc.)

- Conduct interviews with employees, supervisors and managers to identify/correct unsafe practices and conditions.

- Alternative official that is responsible for the Select Agent Program.

- Perform risk assessments to ensure that the appropriate control measures are implemented.

- Manage the Respirator Protection program. Perform respirator fit testing and training.

- Responsible for the management of the chemical inventory.

- Perform safety orientations for new employees with the employee's supervisor.

- Perform ergonomic assessments and work with the DOH Office of Risk Management to ensure that the PHL complies with WISHA regulations.

- Recommend safety related training.

- Review facility designs and make safety related recommendations.
- Review, with the *Safety and Emergency Response Committee,* the animal handling procedure for the facility.

PUBLIC HEALTH LABORATORIES TRAINING PROGRAM

The PHL program has been conducting extensive laboratory training since it moved to the current facility in 1985. The facility includes a 1,035 square foot training laboratory complex, a classroom that will seat 24 people and a conference room for 90 people. Two full-time staff members are dedicated to providing training activities for both internal and external clients. Additionally, a bioterrorism training advisor has been added to the training program with funds provided by a grant from Centers for Disease Control and Prevention.

The PHL training staff develops and presents training courses for internal and external laboratory personnel. As a member of the National Laboratory Training Network operated by the Centers for Disease Control and Prevention and the Association of State and Territorial Public Health Laboratory Directors, the PHL Training program brings national training programs to Washington State.

Training and Technical Assistance Provided

Conferences, symposia, workshops, seminars and bench training are scheduled for health care personnel throughout the state. A schedule of courses is posted on the web at http://www.doh.wa.gov/EHSPHL/PHL/training/train.htm

For information on the Public Health Laboratories training and technical assistance call (206) 418-5402. Audio-visual materials are available upon request.

TRAINING PROGRAM				
PROGRAM SERVICES				
TRAINING	**WHO CAN PARTICIPATE**	**SERVICES**	**WHEN**	**PHONE #**
Audio-Visual Library	Anyone working in a clinical laboratory; teachers of laboratory science; health care providers.	Audio-visual training aids.	Call to reserve	(206) 418-5404
Workshops Seminars Conferences	Announcements will describe target audiences	Given at the PHL or in local facilities. Designed to meet current needs. May be lectures or lectures and wet workshops.	By announcement	(206) 418-5401
Bench Training	Working laboratory scientists with approval from lab director	New technology management training. Practical experience.	Call to arrange	(206) 418-5401
State Laboratories Tours, Public Relations and Support of Professional Organizations	Laboratory professionals, students, anyone with a special interest, health and laboratory groups	Opportunity to see a public health laboratory and understand how it serves the citizens of Washington.	On request Call to reserve	(206) 418-5401
Student Rotations or Internships	College students who have completed degree required in microbiology, chemistry or health-related coursework.	Opportunity to become familiar with public health careers in their chosen field. Practical experience.	Arrangements must be made through student's advisor.	(206) 418-5401
Postdoctoral Rotations	Students who have competed course work for their doctorate degree.	This rotation will provide an opportunity to work on a public health project related to their degree.	Arrangements must be made through student's advisor.	(206) 418-5401

OFFICE OF NEWBORN SCREENING

Washington State law (RCW 70.83 and WAC 246-650) requires that all babies born in Washington State, with the exception of approximately 3000 military babies who have testing done in Oregon, can be tested for certain conditions affecting newborns. The Office of Newborn Screening performs tests to detect the following ten treatable disorders:

- Biotinidase Deficiency
- Congenital Adrenal hyperplasia (CAH)
- Congenital Hypothyroidism (CH)
- Cystic Fibrosis (CF)
- Galactosemia
- Hemoglobinopathies (including sickle cell disease)
- Homocystinuria
- Maple Syrup Urine Disease (MSUD)
- Medium Chain Acyl Co-A Dehydrogenase Deficiency (MCADD)
- Phenylketonuria (PKU)

Blood from a heel puncture is absorbed on a specialized filter paper; the card is then air dried and submitted to the unit *within 24 hours* for testing.

State law specifies that specimens from newborns have their blood specimens collected prior to hospital discharge and no later than five days after birth. Specimens are to be submitted to the Office of Newborn Screening within 24-hours of collection. Parents may refuse testing on the basis of religious practices or tenets by signing a statement on the back of the NBS collection form. A fee is charged to parents through the hospital of birth. A second newborn screen is highly recommended at 7 to 14 days of age. There is no additional fee for these follow-up screening tests.

Health care providers may obtain screening kits from the Office of Newborn Screening, State Public Health Laboratories, 1610 NE 150th Street, Shoreline, WA, 98155, phone (206) 418-5410 or toll free at 1-866-660-9050; fax (206) 418-5415.

Newborn screening specimens must be sent to:

Newborn Screening
Washington State Department of Health
PO Box 55729
Shoreline, Washington 98155-0729

Place each specimen card in the protective envelope before mailing. Specimens *must not* be placed inside plastic bags since this may cause the blood to degrade, thus invalidating the screening test results.

Dried Blood Hemoglobin Testing

This unit provides testing of dried blood for hemoglobinopathies such as Sickle Cell Disease for patients beyond the newborn period. These tests are available to aid health care providers in diagnosing hemoglobin disorders, family members of affected individuals, and to screen high-risk groups. Hemoglobin testing is usually not indicated for children born in Washington after Nov. 1, 1991, since these children were screened shortly after their birth as part of routine Newborn Screening.

Turnaround Times

Galactosemia.....1 day
Biotinidase, CAH, CH, Homocystinuria, MSUD, MCADD, PKU, CF .....2 days
Newborn Hemoglobin Screening.....5 days
Dried Blood Hemoglobin Testing.....11days

NEWBORN SCREENING

Collection and Submission Instructions

AGENT/ DISEASE	SPECIMEN	COLLECTION TIME	CONTAINER	TRANSPORT TEMP.	STORAGE TEMP.	REMARKS
Biotinidase Deficiency (BIO), Congenital Adrenal Hyperplasia (CAH), Congenital Hypothyroidism (CH), Cystic Firosis (CF), Galactosemia (GAL), Sickle Cell Disease & other clinically significant hemoglobins (HB), Homosysturia (HCY), Maple syrup	Blood from heel stick saturated on filter paper and dried at ambient temperature.	Collected prior to hospital discharge, no later than five days after birth. A second specimen is recommended at 7-14 days.	Specialized filter paper included on specimen collection forms	Air dry at ambient temperature (2 hours minimum); place into individual protective envelopes. Mail within 24 hours of collection (ambient temperature).	Keep at Ambient temperature; ship within 24 hours of collection	For additional information & educational materials, call (206) 418-5410 or toll free at 1-866-660-9050 On the web: www.doh.wa.gov/nbs

Urine Disease (MSUD), Medium Chain Acyl CoA Dehydrogenase (MCADD), Phenylketonuria (PKU)						
Hemoglobin conditions including Sickle Cell Disease and trait (outside of the newborn period)	Blood saturated on filter paper and dried at ambient temperature.	Any.	Specially modified specimen/filter paper card (similar to above)	Same as above	Same as above	For additional information, call (206) 418-5410 or toll free at 1-866-660-9050 On the web: www.doh.wa.gov/nbs

OFFICE OF PUBLIC HEALTH MICROBIOLOGY

This office provides consultation and training to other laboratories, hospitals, health care providers and local health/environmental jurisdictions to enhance technical skills, productivity, efficiency, and to assure quality service. It carries out a wide range of microbiology surveillance activities including isolation, definitive antimicrobial identification, molecular diagnostics, drug sensitivity and/or confirmation of etiological agents of public health and epidemiological concerns.

Enteric Bacteriology

The Enteric Laboratory serves primarily as a reference laboratory for the identification of enteric pathogens. The unit also serves local health jurisdictions by screening clinical samples for enteric pathogens, i.e., *Salmonella, Shigella* and *Campylobacter.* Examinations for *Yersinia, Vibrio,* and *E. coli* O157:H7 are available to local health jurisdictions/districts upon request.

Washington State Board of Health Regulations (WAC 246-100) require that all *Salmonella* (including typhoid fever), *Shigella* and *V. cholerae* isolates be confirmed by the state Enteric Laboratory. All *E. coli* O157:H7 isolates submitted are subtyped using Pulsed Field Gel Electrophoresis (PFGE). All laboratories are requested to submit isolates of *E. coli* O157:H7 for PFGE testing.

Turnaround Times

Salmonella spp.
- Presumptive identification .....3 days
- Final identification .....10 days

Shigella spp.
- Presumptive identification .....3 days
- Final identification .....4 days

E. coli O157:H7
- Presumptive result.....3 days
- Final identification .....6 days

Campylobacter jejuni
Final identification .....6 days
Vibrio
Presumptive identification .....4 days
Final identification .....5 days
Yersinia enterocolitica
Reference culture
Presumptive identification .....3 days
Final identification .....5 days
Stool
Presumptive identification .....3 days
Final identification .....up to 3 weeks

ENTERIC BACTERIOLOGY

Collection and Submission Instructions

AGENT / DISEASE	SPECIMEN & QUANTITY	COLLECTION TIME	CONTAINER	REMARKS
Reference Cultures (Isolates Only)	Send only pure cultures		Double mailer	Non-fermentative agar media; in a screw-cap tube; tighten cap; *use Pai or Loeffler agar for *Salmonella typhi*; for *Campylobacter* use blood agar slant for submission of isolates for confirmation.
Salmonella (not Typhoid)	Swab coated with stool specimen or rectal swab	At onset	Cary-Blair transport media, double mailer	
Salmonella typhi	Stool: Swab coated with stool specimen or rectal swab	Stool: 2 - 3 days after onset	Stool: Cary-Blair transport media, double mailer	
	Urine: Volume equal to amount of Buffered Glycerol Transport		Urine: Request Buffered Glycerol Saline transport media	Urine: Buffered Glycerol Saline transport media is available by calling the Enteric unit (206) 418-5456.
Shigella	Swab coated with stool specimen or rectal swab	At onset	Cary-Blair transport media, double mailer	
Vibrio	Swab coated with stool specimen or rectal swab	At onset	Cary-Blair transport media, double mailer	Call the Enteric unit (206) 418-5456 before sending. Specify test on Enteric form.
Campylobacter	Swab coated with stool specimen or rectal swab	At onset	Cary-Blair transport media, double mailer	Use blood agar slant for submission of isolates for confirmation.

ENTERIC BACTERIOLOGY				
Collection and Submission Instructions				
AGENT / DISEASE	**SPECIMEN & QUANTITY**	**COLLECTION TIME**	**CONTAINER**	**REMARKS**
Yersinia enterocolitica	Swab coated with stool specimen or rectal swab	At onset	Cary-Blair transport media, double mailer	Test requires three (3) weeks; Specify test on Enteric form.
Escherichia coli O157:H7	Swab coated with stool specimen or rectal swab	At onset	Cary-Blair transport media, double mailer	Specify test on Enteric form; PFGE testing included. CDC performs tests for SLT I & II on non-motile isolates.
Shiga toxins I, II (verotoxins) produced by enterohemor-rhagic *E. coli*	Swab coated with stool specimen or rectal swab	At onset	Cary-Blair transport media, double mailer	EIA for detection of Shiga toxins I, II (verotoxins) available. Please specify on Enteric form.

*Note: All culture samples (except *Salmonella typhi)* use double mailers and slant screw-cap with non-fermentative media.

MOLECULAR DIAGNOSTICS

Working together with the molecular epidemiologist on staff, the microbiology laboratories have been able to collaborate with local, national and international universities, the Centers for Disease Control and Prevention (CDC) in Atlanta, Ga., as well as other state public health laboratories to implement new types of DNA-based technology having an application to public health. The new technologies currently in use or development include PFGE, PCR, fluorescent *in-situ* hybridization (FISH), TaqMan (a real-time PCR) and DNA sequencing. All PCR submission requests must be pre-approved by the local health jurisdiction, and Department of Health Communicable Disease Epidemiology.

Polymerase Chain Reaction (PCR) Unit

SERVICES OF POLYMERASE CHAIN REACTION (PCR) UNIT				
Agent/Disease	**Specimen**	**Collection Time**	**Turnaround Time**	**Remarks**
Diarrhea due to Norovirus	Stool	Illness	2-3 days	RNA extraction followed real-time PCR
Encephalitis due to West Nile Virus	CSF or haemolymph of the mosquito	Illness	2-3 days	RNA extraction followed real-time PCR
Whooping cough due to *B. pertussis*	Dacron Nasopharyngeal swab	Illness	3 days	DNA extraction followed by real-time PCR PCR testing replaces DFA. Only PCR needs local health jurisdiction approval in an outbreak (i.e., culture specimen not co-submitted).
Influenza A & B	Nasopharyngeal swabs, respiratory passage washes/ aspirates		3-7 days, tests are performed as requested*	RNA extraction followed real-time PCR
Mumps	Serum/urine		3-7 days tests are performed as requested *	RNA extraction followed real-time PCR

*Test will be performed immediately if requested by a State Epidemiologist.

Pulsed Field Gel Electrophoresis (PFGE) Unit

PFGE testing is used to genetically compare two or more strains of bacteria. *All specimens submitted to the PFGE Unit should be pure bacterial isolates.*

Turnaround Times

All pure bacterial isolates other than *Mycobacteria**:…….4 days

*The Mycobateriology isolates will be sent to a CDC genotyping lab for genotyping.

PFGE TESTING SERVICES	
BACTERIAL DISEASES/AGENTS	Any bacteria other than *Mycobacteria**
ACCEPTABLE CLINICAL CULTURES	Pure isolated cultures only
ID OR CONFIRMATION	No
TESTS FOR TOXINS/TOXICITY	No
YOUR ID & RESULTS REQUIRED	Yes
DNA TYPING	Yes
CALL BEFORE SHIPPING	Yes, Call: (206) 418-5561
CONFIRMATION REQUIRED BY STATE LAW	
* The Mycobacteriology isolates will be sent to a CDC genotyping lab for genotyping	

MYCOBACTERIOLOGY

The Mycobacteriology unit serves as a reference laboratory for the identification of Mycobacteria. This unit also offers isolation and identification of Mycobacteria from clinical specimens.

Susceptibility testing for the first and second line anti-tuberculosis drugs is performed in this unit on isolates of *M. tuberculosis* complex (Mtb). For a more extensive drug susceptibility profile, isolates are sent to Centers for Disease Control and Prevention (CDC). It can take longer for drug susceptibility results if the patient shows resistance to any drugs. Submitters requesting results faxed to them must submit a *CONFIDENTIALITY NOTICE* stating that their fax machine is in a secure location accessible *ONLY* to authorized personnel.

Turnaround Times

Smear Results:

Positive smear (phoned, mailed, and faxed).....24-48 hours
Negative smear (mailed).....24-48 hours

Amplified *Mycobacterium Tuberculosis* Direct (AMTD) Test:
Performed twice weekly on first-time positive smears and on special requests with prior arrangement
Results (phoned, faxed, mailed upon request).....24 hours

Culture Results:

AFB positive cultures
(*phoned, mailed, faxed upon request)*.....1-4 weeks
AFB negative cultures (*mailed)*.....8 weeks

Genetic Probe Test (GP):
Performed weekly on AFB positive cultures
Results (phoned, faxed, mailed).....1-4 weeks

If genetic probes are negative for MTBC, *M. avium* complex (MAC), *M. gordonae,* and *M. kansasii*, then the culture is considered *atypical* or a MOTT (Mycobacterium Other Than Tuberculosis), and will be identified using biochemical analysis.

Biochemical Analysis Results.....…1-4 months
(Phoned, faxed, mailed)

Drug Susceptibility Test

Performed on confirmed Mtbc cultures

Bactec*.....7-10 days

Plate method**.....3-4 weeks

*Bactec drugs employed: Streptomycin, Isoniazid, Rifampin, Ethambutol, Pyrazinamide.

**Plate method drugs employed: Streptomycin, Isoniazid, Rifampin, Ethambutol, Ethionamide, P-aminosalicyclic Acid, Ofloxacin, Amikacin.

MYCOBACTERIOLOGY

Collection and Submission Instructions

AGENT/ DISEASE	SPECIMEN	COLLECTION TIME	CONTAINER	TRANSPORT TEMP.	REMARKS
Mycobacteria	Sputum	3 consecutive specimens collected starting with the first in the early morning. Collection is at least 8 hours apart.	Sterile plastic centrifuge tube**	Ambient temperature	Two to three teaspoonfuls are sufficient. Saliva is a poor specimen. Send each specimen as collected. *
	Gastric washing	Before breakfast, early morning specimen on 3 consecutive days is recommended	Sterile plastic centrifuge tube**	Ambient temperature or refrigerate at 4°C	Send each specimen as collected. *
	Urine	Early morning midstream collection on 3 consecutive days, 30 ml per tube, ship each specimen as it is obtained	Sterile plastic centrifuge tube**	4°C, if possible	Send each specimen as collected, tighten cap well and seal with pressure-sensitive labeling tape*
	Stool	See remarks	Sterile specimen container or centrifuge tube	Ambient temperature refrigerate at 4°C	Specimens must be received at the TB Unit within 24 hours of collection, call TB Unit before shipping. *
	Spinal fluid		Small, tightly capped, sterile containers	Ambient temperature or 4°C	Ship as indicated. *
	Tissues or swabs	Collect aseptically	Same as above	Refrigerate at 4°C	Add a small amount of sterile distilled water to prevent drying. * Carey Blair or Aimes transport media NOT recommended.
Mycobacterial Cultures	For ID, confirmation or susceptibility testing		Culture tube, securely tighten cap, seal pressure-sensitive labeling tape*	Ambient temperature	Ship as indicated*, use courier service to ship Petri dishes

* Specimens must be shipped in double cardboard mailers to meet IATA, OSHA and postal requirements.
** Specimen collection kit may be ordered through PHL.

Pursuant to WAC 246-101, positive results for *Mycobacterium tuberculosis* are Notifiable within 2 working days to DOH – Olympia TB Program. Specimen submission is required.

SEXUALLY-TRANSMITTED DISEASES

The Sexually-transmitted Diseases Unit functions primarily as the reference laboratory for the state for the definitive identification or confirmation of cultures, which have been isolated and tested in other laboratories. Reference specimens are accepted from all laboratories. Clinical specimens are only accepted from local health jurisdictions STD clinics. Call (206) 418-5439.

Chlamydia and N. gonorrhea clinical specimens are tested by the Gen-Probe Aptima II Combo test. This is a genetic amplification test and allows the testing of both Chlamydia and N. gonorrhea. Clinical specimens are accepted from local health jurisdiction STD clinics, Family Planning Clinics and Planned Parenthood Clinics.

Turnaround Times

N. gonorrhea clinical specimen .....1 -2 days
N. gonorrhea reference culture.....2 – 5 days
Chlamydia/GC .....2 – 4 days

SEXUALLY-TRANSMITTED DISEASES

Collection and Submission Instructions

AGENT/DISEASE	SPECIMEN	COLLECTION	REMARKS
Gonorrhea Clinical specimen	Culture of urethral exudate, cervix, rectum and throat	Illness or contact	Follow special direction with kits, temperature for incubation and media used are important
Reference culture	All sites		Submit in screw-capped tube, sealed pressure-sensitive labeling tape. Use chocolate agar slant or modified Martin-Lewis pill pocket plate and place in CO_2 biohazard bag. Incubate 35° C 24 hours before shipping.
Chlamydia/N. gonorrhea	Swab of cervix	Project criteria, use collection kits from PHL	This is a Federal project and only participants may send specimens

SPECIAL PATHOGENS SURVEILLANCE (REFERENCE)

The Special Bacteriological Pathogens unit functions primarily as a reference laboratory for confirmation or definitive identification of cultures isolated and tested in other laboratories. The unit uses the Hewlett Packard Microbial Identification System (MIS) along with a variety of biochemical and serological methods to identify these organisms. The selection and extent of the tests used for identification vary according to the origin of the specimen from which the microorganism was isolated, and the type of infection suspected or produced. This information must be provided on the Reference Bacteriology Laboratory Request form before processing can begin. Clinical, Environmental and Bioterrorism specimens may be accepted for organisms which produce infections such as anthrax, human Brucellosis, botulism (food, wound, and infant), cholera and non-cholera Vibrio, glanders, melioidosis, plague, tetanus, tularemia, relapsing fever and Legionnaires' disease.

Unless there is a special problem, the unit does not test animal and environmental isolates (if there is a suspect/ identified public health program, the Special Pathogens lab will test with the approval of Department of Health's Epidemiology Section (206) 418-5500 or toll free 1-877-539-4344.

Every effort should be made to send a pure, viable culture. Each submitter should maintain a subculture of the organism submitted until the final identification is received.

The unit requests that records of the existing work performed on each culture be included when submitting the culture. The suggested laboratory results accompanying each specimen are listed in the table below.

SPECIAL PATHOGENS SURVEILLANCE (Reference)	
Required Test Results	
Aerobes:	Gram stain reaction Colony morphology Catalase Oxidase Motility Carbohydrate reactions Temperature studies (when pertinent) Spore formation (when pertinent)
Anaerobes:	Gram stain reaction Colony morphology Catalase Motility Spore formation (when pertinent)

Most aerobes can be mailed on blood, chocolate, nutrient, trypticase soy or brain heart infusion agar slants. Anaerobe cultures can be successfully sent in screw-cap tubes of chopped meat, brain broth, fresh thioglycollate broth, boiled motility media, or a commercial transport system. Before shipping anaerobes, overlay the media with ¾ of an inch of sterile Vaspar, petrolatum or paraffin. Tape the tightened caps with pressure sensitive labeling tape. **DO NOT MAIL PETRI DISHES.**

Turnaround Times

Reference Cultures.....7 – 60 days

Laboratory Response Network – Biological Event Response Lab

The Special Pathogens unit provides laboratory support for biological events in response to requests from local health jurisdictions, the Federal Bureau of Investigation, U.S. military and law enforcement. All requests for such laboratory tests must pass through the local health dept. which will alert the state health dept., epidemiology unit (206) 418-5500 or toll-free 1-877-539-4344. Environmental (powders, liquids, etc.) specimens for Biological Emergency Response should first involve local law enforcement. Biological Emergency Response is available around-the-clock, 24 hours-a day, seven days a week. The Special Pathogens Unit does not accept such samples from the public or from commercial entities.

Clinical samples and bacterial isolates can be sent to the Special Pathogens lab. Submitting institutions should first call the local health department.

Special Bacteriology Requests Turnaround Times

Bacillus anthracis (Anthrax)
- Presumptive culture .....1 – 4 hours
- Confirmed .....48 hours

Clostridium botulinum (Botulism)
- Presumptive Toxin.....2 – 6 hours
- Confirmed Toxin.....4 days
- Culture.....7 – 14 days

Francisella tularensis (tularemia)
- Presumptive Culture confirmation.....1 – 4 hours
- Culture Isolation.....2 – 7 days

Yersinia pestis (plague)
- Presumptive.....1 – 4 hours
- Confirmed .....14 days

Brucella species
- Culture.....10 – 31 days

Legionella species
- DFA.....1 – 4 hours
- Culture.....3 – 7 days
- Environmental (pre-approved by Epidemiology).....10 – 14 days

Burkholderia pseudomallei

Presumptive.....24 hours
Final .....7 days

Burkholderia mallei

Presumptive.....24 hours
Final .....7 days
Ricin toxin.....8 hours

Stock Cultures

The Special Bacteriological Pathogens unit has a collection of reference bacteria. These organisms are available to any laboratory in the state upon request. For reasons of time and expense involved, the laboratory must limit the number of requests from any one laboratory. Included in our collection are a variety of less commonly encountered organisms. The Special Pathogens unit does not send out stock cultures that pose a significant public health threat. These include *Bacillus anthracis, Brucella* spp., *Yersinia pestis, Francisella tularensis, Burholderia pseudomallei, Burkholderia mallei, Clostridium botulinum, and Salmonella typhi.*

Please consult with the unit before ordering stock cultures (206) 418-5452. They can also discuss with you the best way to maintain the requested organisms. Requests for cultures must be made on your official letterhead.

Services of Special Pathogens Surveillance

Bacterial Diseases/Agents	Acceptable Clinical Cultures	Id or Confirmation	Tests For Toxins/ Toxicity	Antimicrobial Susceptibility Tests	Your Id & Results Required	Call Before Shipping (206)418-5452	Typing or Grouping available	Confirmation Required By State Law
Misc Anaerobic infections	PureCulture	yes	Clostridia only	No	Yes	No	No	No
Bacillus anthracis	Clin. or culture	Yes	No	Yes	No	Yes	No	Yes
Botulism (food, wound, infant)	Clin. Or culture	Yes	Yes	No	No	Yes	Yes	Yes
Brucellosis (human)	Clin. Or culture	Yes	NA	@CDC	No	Yes	NA	Yes
Cholera& non-cholera Vibrios	Clin. Or culture	Yes	NA	Upon request	No	Yes	Yes	Yes
Clostridia spp. other than *Cl. botulinum*	Culture	Yes	Yes	@CDC	Yes	No	NA	No
Corynebacterium spp, other than *C. diphtheriae/ulcerans*	Culture	Yes	Yes	Upon request	Yes	No	NA	No
Corynebacterium diphtheriae/ulcerans	Clin. Or culture	Yes	Yes	Upon request	No	Yes	Yes	Yes
Misc gram negative bacterial id	Culture	Yes	No	Upon request	Yes	No	NA	No
Misc aerobic gram Positive rod identification (Bacillus, Listeria, etc)	Culture	Yes	NA	Upon request	Yes	No	NA	No
Legionella spp.	Clin. Or culture	Yes	NA	No	No	Yes	Yes	No
Burkholderia mallei	Clin. Or culture	Yes	NA	Upon request	No	Yes	NA	Yes
Burkholderia pseudomallei	Clin. Or culture	Yes	NA	Upon request	No	Yes	NA	Yes
Neisseria meningitidis (sterile body sites)	Culture if possible	Yes	NA	Upon request	No	Yes	Yes	Yes
Misc. aerobic gram negative rods	Culture	Yes	NA	Upon request	Yes	No	No	No
Yersinia pestis (plague)	Clin. Or Culture	Yes	No	@CDC	No	Yes	NA	Yes
Streptococcus pneumoniae	Culture	Yes	NA	No	Yes	No	No	No
Rat Bite Fever	Culture	Yes	NA	No	Yes	Yes	NA	No
Borrelia infections	Clin. Or Culture	Yes	NA	No	No	Yes	NA	No
Misc. Gram Positive Cocci id.	Culture	Yes	NA	Upon request	Yes	No	Yes	No
Tetanus	Clin. Or Culture	Yes	Yes	NA	No	Yes	NA	Yes
Francisella Tularensis (tularemia)	Clin. Or Culture	Yes	NA	@CDC	No	Yes	Yes	Yes
E. coli O157	Clin. Or	Yes	Yes	NA	No	Yes	Yes	No

Services of Special Pathogens Surveillance

Bacterial Diseases/Agents	Acceptable Clinical Cultures	Id or Confirmation	Tests For Toxins/ Toxicity	Antimicrobial Susceptibility Tests	Your Id & Results Required	Call Before Shipping (206)418-5452	Typing or Grouping available	Confirmation Required By State Law
	Culture							
Shigella spp.	Clin. Or Culture	Yes	Yes	Upon request	No	No	Yes	Yes
Salmonella spp.	Clin. Or Culture	Yes	NA	Upon request	No	No	yes	Yes
Misc Anaerobic infections	PureCulture	yes	Clostridia only	No	Yes	No	No	No

Special Pathogens Collection and Submission Instructions

Clostridium botulinum

Type Of Botulism	Specimen	Collection	Results/Tat	Remarks
Food Botulism	Serum	A 5 - 15 ml specimen (preferred) collected soon after onset of symptoms and before antitoxin is given	All results are from 4 hours to 14 working days for Food and Infant & wound botulism	Advise Lab if any drugs have been given Specimens (food, stool, serum) should be submitted on suspect cases. See WAC 246.100-231 for further details
	Gastric Material	Walnut-size (50 gm)		For all specimens, unless otherwise specified:
	Stool	10 - 50 grams (preferably walnut-size). Enema material is acceptable. Obtain specimen from sterile (non-bacteriostatic) water or saline enema. A volume of 20 ml collected after enema is sufficient.		Place specimen in a sterile, leak-proof container, place in plastic bag, then in an insulated shipping container with ice packs
	Vomitus	10 - 15 ml		Ship cold*
	Food	Unopened food, food remnants, dishwasher-washed/unwashed container		DO NOT FREEZE
Infant Botulism	Stool	Frequently difficult to obtain a sufficient quantity. Obtain specimen from sterile (non-bacteriostatic) water or saline enema. A volume of 20-30 ml collected is sufficient.		

	Autopsy Specimens	Intestinal samples should be taken from different levels (small bowel, proximal colon, distal colon)		Prior approval by CD Epidemiology required (206) 418-5500
Wound Botulism	Serum	Same as serum above	4-96 hours	Notify Special Bacteriological Pathogens Unit as to when and how specimens are being shipped (206) 418-5452
	Tissue	Representative tissue sample	2-14 working days	
	Swab	Swab place in anaerobic transport media	2-4 working days	Ship ambient temperature

Legionella (Legionnaire's Disease) Culture and DFA

Agent/ Disease	Specimen	Collection	Transport Temp.	Remarks
Culture	Bronchial washing, bronchoalveolar lavage, pleural fluid, sputum or trans-tracheal aspirates, fresh lung biopsy material	Illness	Keep cool with ice packs	Sterile, screw-capped container or tube
DFA Slides	Preserve specimens in 10% formalin or slides cut from paraffin sections	Submit a minimum of 5 slides with 2 test areas	Ambient temperature	With all Legionella specimens
Tissue	Preserve specimens in 10% formalin or slides cut from paraffin sections	Submit a minimum of 5 slides with 2 test areas	Ambient temperature	Ship promptly Transport slides in slide carriers
Environmental Prior approval by State Epidemiology required	1-10 liters water, swabs from faucet, cooling tower water, soil	Patient with symptoms compatible with legionnaires' Disease	Keep cool with ice packs	Ship promptly, Specimen collection usually performed by State Lab personnel

Services are provided for the diagnosis and confirmation of those infectious disease agents that are of a public health nature. Group A *Streptococcus* isolates from patients who present diagnostic problems and require reference services will be accepted. Local laboratories should be utilized for routine testing for Group A *Streptococcus*. Clinical specimens for *Corynebacterium diphtheria* and *Bordetella pertussis* are accepted directly from laboratories and local health jurisdictions.

Turnaround Times

Bordetella pertussis
Culture.....7 – 10 days
PCR.....2 – 3 days

Corynebacterium diphtheriae
Clinical.....2 – 3 days
Culture.....2 days
PCR.....2 -3 days

Corynebacterium ulcerans
Clinical.....2 – 3 days
Culture.....2 days
Toxin Test.....4 days

Group A Streptococci
Clinical/Culture.....1 – 2 days

SPECIAL RESPIRATORY PATHOGENS

Collection and Submission Instructions

Agent/Disease	Specimen	Collection Time	Remarks
Bordetella pertussis *Clinical Culture* PCR	Swab left and right nasopharyngeal areas Dacron Nasopharyngeal swab (left and right areas)	Illness Illness	Streak one set of swabs of on Kendrick-Jones charcoal agar, leave swabs in tube Tests are performed two times per week.* PCR testing only must be pre-approved by the County Health Dept.
Corynebacterium diphtheria Throat, N/P Wound Culture Reference Culture	Swab both of the names to the posterior pharyngeal wall and the oral pharynx Clean wound site with sterile, normal saline removing crusted material Submit on Pai slant, Loeffler slant, or blood agar slant	Illness, contact or carrier	Obtain nasopharyngeal cultures with a flexible alginate swab, take throat cultures with a cotton - or Dacron swab which is firmly applied to any area with a membrane or inflammation, streak nasal specimen on one Pai slant; the oropharynx on the other pai slant, leave swabs in tube. Place cotton - or type swab firmly to base of the wound, streak swab on Pai slant, leave swab in tube

Group A *streptococci* Clinical Reference Culture	Tonsils and pharynx should be rubbed with a cotton- or Dacron-tipped swab, touch any exudates with the swab, avoid the tongue and uvula tissues	Illness	Streak one swab on Pai slant, leave swab in tube, place second swab in silica gel tube Submit on blood agar slant

*Test will be performed immediately if so requested by a State Epidemiologist.

SYPHILIS SEROLOGY

The Syphilis Serology Unit serves primarily as the reference laboratory for the confirmation of sera results that are reactive by any serological test for syphilis. The Venereal Disease Research Laboratory (VDRL) test is a diagnostic test that is performed on all sera and spinal fluids submitted to the Syphilis Serology Unit. If the result is weakly reactive (WR) or (R), a confirmatory test (TP-PA) that is specific for *Treponema pallidum* antibody is performed.

If the patient has symptoms suggestive of syphilis; check the reference box. If the submitter has a reactive syphilis test result, check the reference box. TP-PA will be performed for all reference requests.

The VDRL is used to evaluate the results of treatment therapy as it tends to revert to a lower titer or non-reactive after treatment. The TP-PA will remain reactive after treatment.

Test Interpretation – Serum and Spinal Fluid

VDRL results:*	TP-PA results:
Non-reactive (-)	Non-reactive (-)
Weakly reactive, Titer of 1:0	Reactive (+)
Reactive, Titer of 1:1 or greater	

*Spinal fluid rarely produces biological false positive reactions. A reactive spinal fluid usually indicates tertiary syphilis. Confirmatory testing by TP-PA is not performed on CSF, but can performed with serum.

Turnaround times

VDRL.....5 days
TP-PA .....6 days

SYPHILIS SEROLOGY				
Collection and Submission Instructions				
AGENT/ DISEASE	SPECIMEN	TRANSPORT TEMP.	STORAGE TEMP.	REMARKS
Syphilis	Draw 5 - 10 ml sterile whole blood in a tiger- or red-top tube	Refrigerated is preferred, ambient temperature transport is acceptable	Refrigerator (2-8ºC)	Use sterile chemically clean tubes, syringes, etc. Never freeze whole blood.
	2.0 ml serum	Same	-20°C freezer or refrigerator (2-8ºC)	Do not send plasma. Transport promptly
	0.5 ml Cerebral Spinal Fluid (CSF)	Same	Refrig (2-8ºC)	Transport Promptly

Premarital Blood Testing

Washington State law does not require a premarital blood test for syphilis; however, some states do. Premarital testing can be performed by any laboratory which is a Medical Test Site licensed and certified for Syphilis Serology. The laboratory performing the test should obtain and fill out the premarital certificate that is then submitted to the patient's doctor for signature. The Public Health Laboratories have Premarital Certificates for those states requiring premarital Syphilis Serology testing and can perform a test for syphilis.

Information Required on Lab Form for Premarital Certificate

Patient's full name including middle name spelled out, patient's address, age, sex, date blood was drawn, name and address of doctor and state where patient is getting married. This information is required on the premarital certificate.

Testing Information

A doctor licensed to practice in Washington State must request syphilis blood tests. A time limit for testing to be completed is stated on the premarital certificate. Any laboratory that is CLIA licensed for syphilis serology may perform the test, or the laboratory may submit serum to PHL.

Deliver blood and laboratory form to Washington State Public Health Laboratories (PHL) by courier, mail or by patient. Non-reactive results can be provided within three work days of receipt. Same-day results can be provided ***only if*** the patient calls PHL at (206) 418-5622, delivers blood on a testing day by test cutoff time, and picks up premarital certificate at PHL.

Reactive results must be confirmed, which requires an additional three work days. **After the test is completed, the doctor who requested the test must sign the certificate.**

Some states also require a rubella test for women of childbearing age. This test is not available at the State Laboratories, but most private laboratories do this test. The Seattle-King County Laboratory also does rubella testing.

States Requiring Syphilis	States Requiring Rubella
Georgia	Georgia
Massachusetts	Indiana
	Montana

VIROLOGY

The Virology unit provides reference, surveillance and diagnostic services. Laboratory diagnosis of viral agents can be done by culturing for the virus, serologic testing for associated antibody, or by antigen detection. The preferred methodology varies with each virus; see the following tables for information about specific viruses. Ship all specimens' cold, labeled with patient's name, for overnight delivery. Specimens without a patient name written on the tube may not be tested. A "Virus Examinations" lab form, with the patient name, type of specimen, date of onset, date of collection, test requested, and submitter name and address must accompany all specimens.

Most viral testing requires approval by Epidemiology (phone 206-418-5500) before sending the specimens. These tests are for detection of influenza, measles, mumps, hantavirus, Norovirus, rabies, rubella, St. Louis encephalitis, and West Nile virus.

VIROLOGY	
Testing Information	
Culture	Culture, or isolation, of virus is performed by inoculating the specimen into tissue culture cells. For best recoverability and survival of a virus, 1) collect within three days of onset of symptoms, 2) place swabs in Viral Transport Medium (VTM), and 3) keep the specimen cold at all times, including during shipment.
Serologic Testing	All serology tests require prior approval by Epidemiology. Testing of serum (or limited testing of CSF) by enzyme-linked immunosorbent assay (ELISA) detects IgA, IgM, and IgG antibodies to determine recent infection. The PHL performs ELISA only on people who are sick. Collect blood in a red top or red-gray top tube at the following times: measles, 3 days post onset of rash; rubella, 5 days post onset of rash; West Nile and SLE, 8 days post onset of symptoms; Hantavirus as soon after onset as possible. When blood is drawn before these times, a second draw is sometimes needed to verify the results.
Antigen	Directigen, Direct Fluorescent Antibody (DFA), and real time reverse transcriptase polymerase chain reaction (RT-PCR) can detect viral antigen in the original specimen. Directigen Flu A is performed on respiratory specimens collected by selected nursing homes, physicians, and LHJ's. DFA can detect Varicela-Zoster virus in vesicular fluid. DFA is also done on animal brain to detect rabies. RT-PCR can detect antigen from West Nile virus, mumps, influenza, and Norovirus.

Rabies	To determine when an animal needs to be tested for rabies, consult your local health jurisdiction (LHJ), which will coordinate submission of the animal brain to the virology unit. A DFA test detects rabies virus. All results of rabies testing are reported by telephone, in addition to mail, to the submitting LHJ. Emergency (evenings and weekends) rabies testing can be arranged by consultation with the Epidemiologist on call at (206) 418-5500.
PCR	Influenza A & B can be identified by real-time RT-PCR. Influenza A can be subtyped to H1, H3, H5 or H7. Sputum, respiratory secretions, or nasopharyngeal swabs can be submitted. Place Dacron swabs in VTM and transport cold to PHL.

Virus Testing

Symptoms and Virus	Specimens for Isolation	Type of Serology	Other Tests
Respiratory Symptoms			
Adenovirus	NW, NP/THR		
Enterovirus	NW, NP/THR		
HSV	NW, NP/THR		Directigen Flu A
Influenza Virus	NW, NP/THR		RT-PCR
Mumps Virus	Parotid gland, (buccal)	ELISA-IgG, IgM	RT-PCR
Parainfluenza Virus	NW, NP/THR		
RSV	NW, NP		
Rash Symptoms			
Vesicular			
Enterovirus	NW, NP/THR, Stool, VF		
HSV	VF		
Varicela-Zoster (VZV)	VF		VZV DFA, PCR
Maculopapular			
Adenovirus	NW, NP/THR		
Measles (Rubeola)		ELISA – IgG, IgM	
Rubella Virus		ELISA – IgG, IgM	
CNS Symptoms (Meningitis, Encephalitis)			
Adenovirus	NW, NP/THR, CSF		
Enterovirus	NW, NP/THR, Stool, CSF		
HSV	CSF, Brain		
Mumps	NW, NP/THR, Urine, CSF		Mumps RT-PCR
Rabies			Rabies DFA
St. Louis Encephalitis (SLE)		MIA/ELISA – IgM, IgG	
West Nile Virus (WN)		MIA/ELISA – IgM, IgG	WN RT-PCR

Congenital, Perinatal Symptoms			
Enterovirus HSV	NW, NP, THR, Stool, CSF NW, NP/THR, VF		
Gastrointestinal Symptoms			
Adenovirus Enterovirus Norovirus	Stool Stool Stool		 Norovirus RT-PCR
Genital Lesions			
HSV	VF, ES		

Legend: CSF: cerebral spinal fluid, **DFA:** direct fluorescent antibody, **ES:** endocervical swab **IgA:** initial antibody formed, transient (half-life of 4-5 days), **IgG**: antibody formed 2-3 weeks after onset of disease, **IgM:** antibody formed soon after onset of symptoms, between IgA and IgG, **NP**: nasopharyngeal , **NW**: nasal wash, **RT-PCR**: reverse transcription polymerase chain reaction, **THR**: throat, **VF**: vesicular fluid. **ELISA** – enzyme linked immunosorbent assay, **MIA** – microsphere immunoassay

Specimen Guide Notes:

1. Symptom onset dates are needed for ALL SPECIMENS.

2. Send ALL SPECIMENS **cold**.

3. Isolation, DFA, and RT-PCR.
    a. Ideally, collect specimen within three (3) days of the onset of symptoms. More than 3 days will result in a lower virus load and may cause a failure to detect virus.
    b. Send cold within 24 hours of collection for overnight deliver. Varicela-Zoster virus and measles virus in particular are fragile viruses.

4. Serology:
    a. Specimens may or may not test positive for measles specific IgM antibody testing by the first day of rash; however, by the third day after rash onset 95% of measles cases are positive.

    b. Persons with rubella infection are slower to form antibody than persons with measles. If the initial serum is rubella IgM test is negative, and the clinical diagnosis of rubella has not been ruled out, draw another serum seven (7) days after the first and retest.

    c. For other serologic tests, an "acute" serum is one drawn within 7 days of the onset of the symptoms. A "convalescent" serum is one collected 2-3 weeks after the onset of illness. It is usually advantageous to collect both. Acute and convalescent sera must be tested together.

    d. In positive cases, a rising IgG antibody level between acute and convalescent specimens should be seen indicating recent illness; a stable antibody level between acute and convalescent specimens indicates a history of illness or vaccination at some time in the past.

e. For arbovirus serologies, travel history one month prior to the onset and a history of insect bites during the travel should be entered on the lab form. Acute and convalescent sera are strongly preferred.

Note: This specimen guide is only a partial list of viruses that may be tested by reference laboratories. Call the Virology Laboratory to ask about a particular viral test. If the specimen will be tested by the Centers for Disease Control, a two-page (8 ½ x 11 size) form needs to be filled out and can be faxed upon request.

Turnaround Times

Virus Culture.....7 – 14 days
Virus Serology .....3 – 7 days
Rabies.....1 day
RT-PCR.....TAT*
*varies by agent suspected, contact virus lab (206) 418-5458

HIV/AIDS (Acquired Immune Deficiency Syndrome)

This unit provides HIV clinical laboratory serum testing ONLY to local health jurisdictions and contracted sites approved by the HIV program. The Request for Antibodies to HTLV III form must be completed for testing. Identify the specimen by patient's initials, birth date, and/or a patient number.

The causative agent of Acquired Immune Deficiency Syndrome (AIDS) is the Human Immunodeficiency Virus (HIV). The previous name was HTLV III/LAV.

The screening procedure for serum specimens is an ELISA or EIA test. If the ELISA or EIA gives is a repeatable reactive (reactive in two separate runs), a supplemental test is done. The supplemental test is the Western Blot.

HIV Turnaround Times

ELISA/EIA .....1 – 2 days
Western Blot .....5 days

APPENDIX A: Shipping Information for PHL Clients

ICAO Guidance Document

Packaging and Labeling Checklists:

- Method of Transport
- Infectious Substance Category A: Transport via Surface (taxi, private car, courier)
- Infectious Substance Category A: Transport via Air
- Biological Substance Category B: Transport via Surface
- Biological Substance Category B: Transport via Air
- Biological Substance Category B: Transport via USPS

APPENDIX A

ICAO GUIDANCE DOCUMENT

Consignment of Diagnostic Specimens 2003 – 2004

Interpretation/Guidance Document developed by ICAO Dangerous Goods Panel members nominated by Canada, United Kingdom and United States in collaboration with the World Health Organization (WHO).

Note: This document is only valid for the period of 1 January 2003 through 31 December 2004. Please refer to the ICAO website for updates and changes that have occurred since this document was published (http://www.icao.org)

Introduction

The 2003-2004 ICAO Technical Instructions include amendments for diagnostic specimens. The purpose of this document is to provide information and guidance for complying with the amendments. Specifically the document provides guidance on:

Use of the new requirements for diagnostic specimens
Packaging and consignment procedures
Passenger and operator provisions
Substances included or excluded from shipment as diagnostic specimens
Emergency response procedures

The previous references to risk groups for determining if a substance may be transported as a diagnostic specimen have been removed (see 2;6.2.1.3.2). The 2003-2004 edition of the Technical Instructions maintains the risk group criteria for classifying infectious substances, but is anticipated that the classification criteria will be replaced in the 2005-2006 edition of the Technical Instructions when the ICAO Dangerous Goods Panel considers the infectious substances requirements that were recently adopted for the 13th revised edition of the UN Model Regulations. As a result of the 2003-2004 amendments, specimens known or suspected of containing pathogens meeting the criteria for risk groups 2 or 3 may be transported as diagnostic specimens when they are transported for diagnostic or investigational purposes. Specimens known or suspected of containing risk group 4 pathogens must be classified in Division 6.2 under UN 2814 or UN 2900, as appropriate and transported according to the requirements for these substances.

The text below is provided to explain the impact of the amendments to the diagnostic specimens' requirements in the Technical Instructions. Then new requirements for diagnostic specimens that were adopted by the 12th revised edition of the UN Model Regulations have been adopted in other modal regulations and in certain national and regional transport regulations effective January 1, 2003.

The definition and relevant requirements

6.3.1.3.1 Diagnostic specimens are any human or animal material including, but not limited to, excreta, secreta, blood and its components, tissue and tissue fluids being transported for diagnostic or investigational purposes, but excluding live infected animals.

6.3.1.3.2 Diagnostic specimens must be assigned to UN 3373 unless the source patient or animal has or may have a serious human or animal disease which can be readily transmitted from one individual to another, directly or indirectly, and for which effective treatment and preventative measures are not usually available, in which case they must be assigned to UN 2814 or UN 2900.

Note 1: *Blood which has been collected for the purpose of the blood transfusion or for the preparation of blood products, and blood products and any tissues or organs intended for use in transplants are not subject to these instructions.*

Note 2: *Assignment to UN2814 or UN 2900 must be based on known medical history of the patient or animal, endemic local conditions, symptoms of the patient or animal or professional judgment concerning individual circumstances of the patient or animal.*

Diagnostic specimens, including those taken from apparently healthy individuals, may contain pathogens that meet the criteria for risk groups 1, 2, 3 or 4. Pathogens are defined as microorganisms (including bacteria, viruses, rickettsiae, parasites, fungi) and other agents such as prions that can cause disease in humans or animal. Pathogens are carried in blood, on the skin, in saliva or feces. Specimens containing risk group 1 pathogens are not subject to the Technical Instructions. Specimens containing risk group 4 pathogens are not permitted for transport as diagnostic specimens. Diagnostic specimens containing risk group 2 or 3 pathogens present a lower risk in transport as compared to infectious substances containing risk group 4 pathogens or pathogens that are intentionally propagated in high concentrations such as those being transported for medical research. Effective treatments are available and the risk of the spread of infection is limited for risk group 2 or 3 pathogens. Additionally, the risk of transmission from one infected individual to another is not as great for these pathogens. Since the packaging requirements of packing instruction 650 afford a high level of safety, the probability of exposure is relatively low. The probability of transmission of an infection or disease to an exposed individual from a diagnostic specimen is also relatively low. Effective and cautious emergency response procedures and employee training significantly minimize the risk of exposure and subsequent transmission of infection or disease.

Consignors, who would normally be health care professionals, must make a judgment about the presence of pathogens of risk group 4. However, such judgment is not required in respect of risk group 2 or 3, provided the specimens are being transported for diagnostic or investigational purposes. Specimens containing pathogens of risk group 2 or 3 transported for any other purpose must be consigned as UN2814 or UN2900.

These requirements were developed in coordination with experts from the WHO, and provide a level of safety commensurate with the risk in transport without imposing an undue burden on those who are required to determine whether an infectious substance may be transported as a diagnostic specimen. In particular, the amendments:

- Avoid direct reference to WHO Risk Groups, which had been developed by WHO for purposes other than transport and remove ambiguity related to the previous use of the terms "reasonably expected to contain" or "those where a relatively low probability exists."
- Limit the application of requirements in transport to those commensurate with the actual, rather than the perceived, risk.
- Require easily obtainable, suitable packaging affording a high level of safety appropriate to the degree of hazard and conditions of transport. Packing Instruction 650 is appropriate for the transport of diagnostic specimens containing pathogens belonging to risk groups 2 and 3.
- Permit ready consignment and provide for the universal and effective treatment of individuals in the healthcare system.

It should be noted that determining if a substance is infectious has always included subjective analysis in the absence of actual testing. The 2003-2004 amendment minimizes the subjectivity relative to determining if a substance may be transported as a diagnostic specimen. Classifying these materials based on the level of risk and applying transport requirements commensurate with that risk should ensure an adequate level of safety.

Packaging and Consignment Procedures

Packing Instruction 650 is intended to provide all the information necessary to prepare and transport safely a consignment of diagnostic specimens. Among other requirements:

1. The packaging must be of good quality capable of passing a 1.2m drop test and must consist of three components:
    a. A primary receptacle containing the diagnostic specimen;
    b. A secondary packaging, and
    c. An outer packaging with suitable cushioning material.
2. Either the primary or secondary receptacle must be capable of withstanding an internal pressure producing a pressure differential of not less than 95 kPa for liquids.
3. The package must be marked "DIAGNOSTIC SPECIMEN". The UN number is not required to be shown.

Passenger and Operator Provisions

Diagnostic specimens are not permitted for transport in carry-on or checked baggage and must not be carried on a person. Operators must not load or transport diagnostic specimens unless they are transported as cargo in accordance with the provisions of 7, 2.1 of the Technical Instructions.

Substances Excluded From Shipment as Diagnostic Specimens

NOTE 1: *The following list is not exhaustive. Infectious substances, including those containing new or emerging pathogens which do not appear in the following list but which meet the same criteria, must not be transported as a diagnostic specimen. In addition, if there is doubt as to whether or not a pathogen falls within this category, it must not be transported as a diagnostic specimen.*

Note 2: *In the following table, the microorganisms' indicated in italics are bacteria, mycoplasmas, rickettsiae or fungi.*

Note 3: *Cultures (laboratory stocks) are the result of a process by which pathogens are amplified or propagated in order to generate high concentrations, thereby increasing the risk of infection when exposure to them occurs. This refers to cultures prepared for the intentional generation of pathogens and does not include cultures intended for diagnostic and clinical purposes. Cultures prepared for the intentional generation of pathogens may not be transported as diagnostic specimens.*

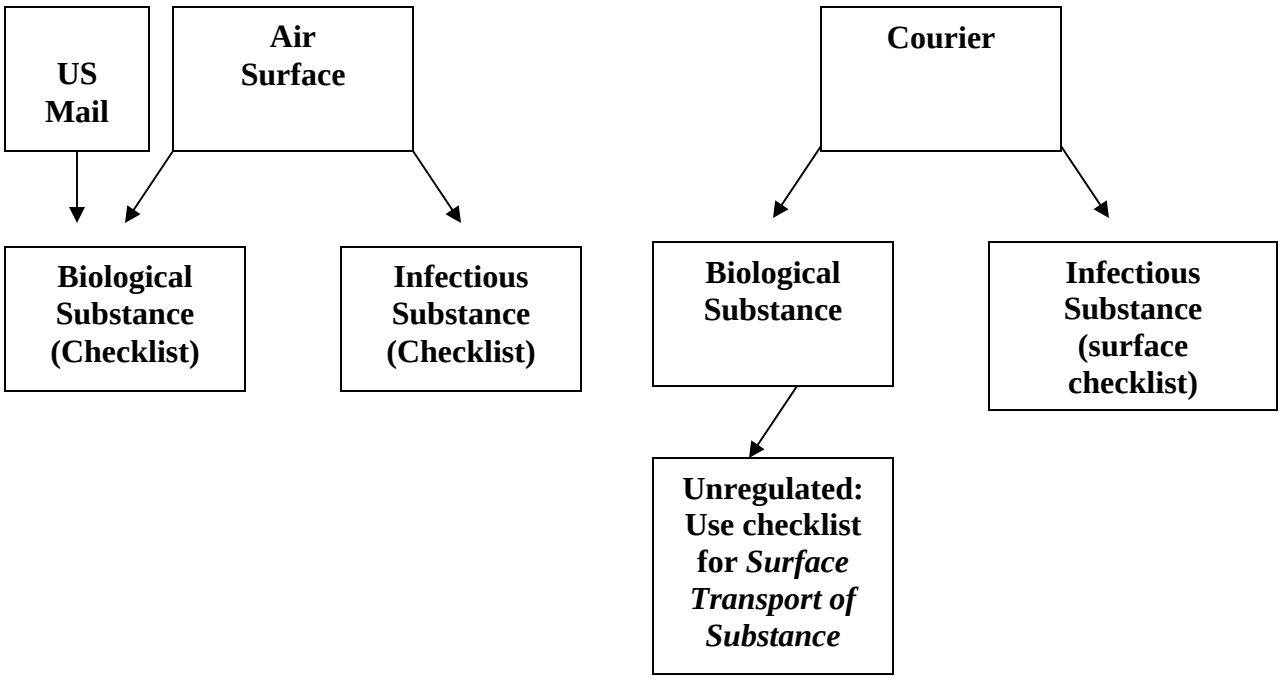
Note 4: *If a health authority list is available that shows other pathogens regarded as Risk Group 4, this should also be taken into account and the substances should not be transported as diagnostic specimens.*

INDICATIVE EXAMPLES OF INFECTIOUS SUBSTANCES FORBIDDEN AS DIAGNOSTIC SPECIMENS IN ANY FORM UNLESS OTHERWISE INDICATED (LIST MAY NOT BE COMPLETE)	
UN Number and Proper Shipping Name	**Microorganism**
Category A, Infectious substances affecting humans	*Bacillus anthracis* (cultures only) *Brucella abortus* (cultures only) *Brucella melitensis* (cultures only) *Brucella suis* (cultures only) *Burkholderia mallei - Pseudomonas mallei* – Glanders (cultures only) *Burkholderia pseudomallei – Pseudomonas pseudomallei* (cultures only) *Chlamydia psittaci* - avian strains (cultures only) *Clostridium botulinum* (cultures only) *Coccidioides immitis* (cultures only) *Coxiella burnetii* (cultures only) Crimean-Congo hemorrhagic fever virus Dengue virus (cultures only) Eastern equine encephalitis virus (cultures only) *Escherichia coli*, verotoxigenic (cultures only) Ebola virus Flexal virus *Francisella tularensis* (cultures only) Guanarito virus Hantaan virus Hantaviruses causing hantavirus pulmonary syndrome Hendra virus Hepatitis B virus (cultures only)

Infectious substances affecting humans *(continued)*	Herpes B virus (cultures only) Human immunodeficiency virus (cultures only) Highly pathogenic avian influenza virus (cultures only) Japanese Encephalitis virus (cultures only) Junin virus Kyasanur Forest disease virus Lassa virus Machupo virus Marburg virus Monkeypox virus *Mycobacterium tuberculosis* (cultures only) Nipah virus Omsk hemorrhagic fever virus Poliovirus (cultures only) Rabies virus *Rickettsia prowazekii* (cultures only) *Rickettsia rickettsii* (cultures only) Rift Valley fever virus Russian spring-summer encephalitis virus (cultures only) Sabia virus *Shigella dysenteriae* type 1 (cultures only) Tick-borne encephalitis virus (cultures only)
	Variola virus Venezuelan equine encephalitis virus West Nile virus (cultures only) Yellow fever virus (cultures only) *Yersinia pestis* (cultures only)
2900 Infectious substances affecting animals	African horse sickness virus African swine fever virus Avian paramyxovirus Type 1 - Newcastle disease virus Bluetongue virus Classical swine fever virus Foot and mouth disease virus Lumpy skin disease virus *Mycoplasma mycoides* - Contagious bovine pleuropneumonia Peste des petits ruminants virus Rinderpest virus Sheep pox virus Goat pox virus Swine vesicular disease virus Vesicular stomatitis virus

APPENDIX A

Method of Transport



Infectious Substance Category A: Ground & Air Transport (includes taxi & private cars) 2008

Packaging Checklist

{*Documented Training is required prior to packaging and shipping infectious Agents: 49 CFR 172.700 (h), IATA Section 1.5*}

No Category A Specimens by USPS

49 CFR 173.196	Triple packaging; primary and secondary are leak-proof for liquids and sift-proof for solids *(utilize commercially available shipping systems).*
49 CFR 173.196 IATA 602	In ambient or higher temperature, primary receptacles have been heat-sealed, have a skirted stopper or a metal crimp seal. Screw caps **must** be reinforced with adhesive tape (Prudent step at ALL temperatures).
Table 49 CFR 172.101 49 CFR 172.102(c))(1)	**Quantities***:* *(unless meet Special provisions A82)* a) Max. 50 mL or 50 gms for passenger aircraft b) Max. 500 mL or 500 gms primary and 4 L or 4 kgs for total package for Cargo aircraft
	Paperwork is separated from the specimen by a plastic sleeve or bag.
49 CFR 173.196	Absorbent material, capable of containing an entire spill, is placed between primary and secondary receptacles.
49 CFR 173.196	Multiple primaries placed in secondary packaging must be wrapped individually to prevent contact with each other.
49 CFR 173.196 IATA 602	The primary receptacle or secondary packaging used for infectious substances must be capable of withstanding an internal pressure producing a pressure differential of not less than 95 kPa and temperatures from –40°C to +55°C, without leakage *(utilize commercially available shipping systems).*
49 CFR 178.503	Certified outer shipping package meets UN class 6.2 specifications and packaging instructions (PI) 602 and bears the UN Packaging Specification Marking. Packaging systems must be 4G Class 6.2 and include the last two digits of the year of manufacture *(utilize commercially available shipping systems).*
49 CFR 173.196 IATA 602	Outer packaging at least 100 mm in overall external dimensions and is rigid.
49 CFR 173.196 IATA 602	An itemized list of contents is enclosed between secondary packaging and outer packaging.
49 CFR 173.199	Interior supports in place to secure secondary package after ice has dissipated or melted *(utilize commercially available shipping systems).*
49 CFR 173.196	Chemical Ice, dry ice, or wet ice *(if applicable)* has been placed outside the secondary package (Wet ice should only be used for same day delivery)

49 CFR 173.196	<u>If using wet or dry ice.</u> For wet ice, the package must be leak-proof (sealed in plastic bag). For dry ice, packaging must permit release of carbon dioxide *(utilize commercially available shipping systems).*
Marking and Labeling Requirements	
49 CFR 172.312 IATA 602 Section 7	Orientation (Up) arrows on opposite sides of shipping container if primary containers contain **greater** than 50 mL of liquid.
49 CFR 172.400, 49 CFR 172.101, IATA 7.1	A UN shipping name label *(unless meets Special provision A140)*: "Infectious substance, affecting humans, UN 2814" and the volume/weight of the sample.
49 CFR 172.432	Diamond shaped Class 6 Infectious Substance label with CDC phone number. *(2" x 2" acceptable for only the smallest size package)*
IATA	For volumes over 50 mL (and special provisions A82 are not applicable) "Cargo only" label (orange danger label) is placed adjacent to Class 6 label. *(2" x 2" acceptable for only the smallest size package)*
49 CFR 172.446	Dry Ice: Diamond shaped Class 9 label placed on outer packaging. Enter weight in Kg.
IATA 602	Shipper's name, address and telephone number on box. Consignee's name and address on box.
DOT/IATA	Overpacks *(not to be confused with outer packaging*), if used, must have all the labeling of inner packagings and be marked, "Overpack".
Shipper's Declaration of Dangerous Goods *(Download and type, do not hand write)*	
49 CFR 172.301 (d)	Shipper's name and address
49 CFR 172.301 (d)	Consignee's name and address
	Number of pages using (e.g. Page 1 of 1)
	Cross out "Radioactive" under shipment type
	Cross out "Passenger aircraft" or "Cargo Aircraft" depending on quantities
49 CFR 172.202 Table 172.101	**Proper Shipping Name** *(unless meets Special provision A140):* "Infectious Substance, Affecting Humans (*weight of specimen)* "Dry Ice" *(if applicable)*
49 CFR 172.202 Table 49 CFR 172.101	**Class or Division:** "6.2" for organisms "9" for Dry ice *(if applicable)*

49 CFR 172.301	**UN or ID number:** "UN2814" for organisms "UN1845" for Dry ice *(if applicable)*
49 CFR 172.202 (a)(4)	**Packing Group:** "III" for Dry ice *(if applicable)*

49 CFR 172.202 Table 49 CFR 172.101	**Quantity and type of Packing:** e.g. "1 x 50 mL" for organisms e.g. "3 kg" for Dry Ice *(if applicable)* "Packed in one fiberboard box"
IATA 602 IATA 904	**Packing Instructions:** Infectious Substance……602 Dry Ice……904
	Authorization: Insert special provisions code if applicable
49 CFR 172.604 (d) IATA 602	**Additional Handling information:** *add the following:* "I declare that all of the applicable air transport requirements have been met**."** "Emergency Contact: *(name) (phone numbers must be a 24/7 number*}" {*Shipper is required to make advance arrangements with consignee and the carrier to ensure that shipment is transported and delivered without delay*}
	Name/Title of Signatory:
	Place and Date:
	Signature: (*make sure you are in compliance before signing*)
Additional	
CAP Requirement	Prior to shipment notify the Washington State Public Health Lab of its arrival time. Email: PHL.mailroom@doh.wa.gov Phone: (206) 418-5579 FAX No.: (206) 418-5445
42 CFR 72.3 (f)	***You must keep a copy of a receipt of delivery***
42 CFR 72.4	***You must notify the Director, CDC, if shipment was not received within 5 days***
49 CFR 172.201 (e)	You must retain a copy of the shipping paper for **2 years** after acceptance by the carrier. It must include the date of acceptance (keep the airbill).

Special Provisions

A140: Category A: Infectious substances may omit the technical name from the proper shipping name marking on the package. In addition, where the name of the pathogen is not known, this permits shippers to omit the technical name from the proper shipping name on the Shipper's Declaration and instead show "suspected Category A infectious substance."

A81: The quantity limits do not apply to body fluids known to contain or suspected of containing an infectious substance when transported in primary receptacles not exceeding 1000 mL, and in outer packaging not exceeding 4 L and packaged according to 49 CFR 173.196.

A82: The quantity limits do not apply to human or animal body parts, whole organs or whole bodies known to contain or suspected of containing an infectious.

Biological Substance Category B: Ground, USPS, & Air Transport (includes taxi & private car) 2008	
Packaging Checklist {*Documented Training is required prior to packaging and shipping infectious Agents: 49 CFR 172.700 (h), IATA Section 1.5*}	
49 CFR 173.196	Triple packaging; primary and secondary are leak-proof for liquids and sift-proof for solids *(utilize commercially available shipping systems).*
49 CFR 173.196 IATA 650	In ambient or higher temperature, primary receptacles have been heat-sealed, have a skirted stopper or a metal crimp seal. Screw caps must be reinforced with adhesive tape (Prudent step at ALL temperatures).
49 CFR 173.6 amendment IATA 650	**Quantities:** a) For liquids: Max. each inner package 1.0 L and Max. outer packaging 4 L. b) For solids: Max inner package 4 kg and max. outer packaging 4 kg, excluding ice, dry ice or liquid nitrogen. Passenger or Cargo aircraft acceptable.
	Paperwork is separated from the specimen by a plastic sleeve or bag.
49 CFR 173.196 IATA 650	Absorbent material, capable of containing an entire spill, is placed between primary and secondary receptacles.
49 CFR 173.196 IATA 650	Multiple primaries placed in secondary packaging must be wrapped individually to prevent contact with each other.
49 CFR 173.196 IATA 650	The primary receptacle or secondary packaging used for infectious substances must be capable of withstanding, without leakage, an internal pressure producing a pressure differential of not less than 95 kPa and at temperatures between –40°C to + 55°C *(utilize commercially available shipping systems).*
49 CFR 173.196 IATA 650	Outer packaging with one side at least 100 x 100 mm. Outer package must be of rigid construction. Completed package must meet drop test *(utilize commercially available shipping systems).*
49 CFR 173.196 IATA 650	An itemized list of contents is enclosed between secondary packaging and outer packaging.
49 CFR 173.199	Interior supports in place to secure secondary package after ice has dissipated or melted *(utilize commercially available shipping systems).*
49 CFR 173.196	Chemical Ice, dry ice, or wet ice *(if applicable)* must be placed outside the secondary package (*Wet ice should only be used for same day delivery*)
49 CFR 173.196 0	<u>If using wet or dry ice.</u> For wet ice, the package must be leak-proof (sealed in plastic bag). For dry ice, packaging must permit release of carbon dioxide *(utilize commercially available shipping systems).*

Marking and Labeling Requirements	
OSHA: 1910.103 0(g)(1)(i)(A)	Biohazard warning label attached to secondary packaging (not outside box).
49 CFR 172.312 IATA 602 Section 7	Orientation (Up) arrows on opposite sides of shipping container if primary containers contain greater than 50 mL of liquid. Permitted if already on box.

IATA 650	Outer packaging is marked "Biological Substance, Category B" adjacent to diamond marking (2"x 2") with inner lettering: "UN3373". (*As of October 1, 2006, only "Biological Substance, Category B" will be accepted as the proper shipping name*)
49 CFR 172.446	Dry Ice: Diamond shaped Class 9 label placed on outer packaging. Enter weight in Kg.
IATA 602	Name and telephone number of person responsible for shipment. Inside **or** on outside of package. USPS required it on outer package and inside.
DOT IATA 7.1.4	Overpacks *(not to be confused with outer packaging*), if used, must have all the labeling of inner packagings and be marked, "Overpack".
Documentation	
CAP Requirement	Prior to shipment notify the Washington State Public Health Lab of its arrival time. Email: PHL.mailroom@doh.wa.gov Phone: (206) 418-5579 FAX No.: (206) 418-5445
IATA 650 and 904	**Airbill:** In the Nature and Quantity of Goods box place "Biological Substance, Category B" and/or "Dry Ice".
49 CFR 172.201 (e)	You must retain a copy of the shipping paper for **2 years** after acceptance by the carrier. It must include the date of acceptance (keep the airbill).
42 CFR 72.3 (f)	***You must keep a copy of a receipt of delivery***

APPENDIX B: PHL Accreditation/Certification

Accreditation Body	Certification Number
Clinical Laboratory Improvement Act (CLIA)	50D0661453
College of American Pathologists (CAP)	24626-01
Department of Energy - Radiation Measurement Laboratory	WN-L074-1
Environmental Protection Agency (EPA) for drinking water bacteriology and environmental/radiation chemistry	WA 00003
Food and Drug Administration (FDA)	FOOD #475 SHELLFISH #705
Medical Test Site License (MTS) WA DOH HSQA Office of Laboratory Quality Assurance (LQA)	MTS-1327

APPENDIX C: NOTIFIABLE CONDITIONS

Notifiable Conditions & Washington's Laboratories

Washington State Department of Health

The following laboratory results (preliminary or confirmed) are notifiable to local public health authorities in Washington in accordance with WAC 246-101. Timeframes for notification are indicated in footnotes. **Immediately notifiable results are indicated in bold**. Information provided must include: specimen type; name and telephone number of laboratory; date specimen collected; date specimen received; requesting health care provider's name and telephone number or address; test result; name of patient (if available) or patient identifier; sex and date of birth or age of patient (if available).

Arboviral disease (West Nile virus disease, dengue, Eastern & Western equine encephalitis, etc.) (detection of viral antigen, antibody, or nucleic acid) [2*]

Blood lead level (elevated) [2&i]

Blood lead level (non-elevated) [M&i]

Bordetella pertussis [2*]

Brucella [2*!]

CD4+ counts [M&ii]

Chlamydia trachomatis [2*]

Clostridium botulinum [I*!]

Corynebacterium diphtheriae [2*!]

Cryptosporidium parvum [2*]

Cyclospora cayetanensis [2*!]

Disease of suspected bioterrorism origin [I*!]
Anthrax *(Bacillus anthracis)* [I*!]
Smallpox (Variola virus) [I*!]

*Escherichia coli (*Shiga-like toxin only) [2*!]

Francisella tularensis [2*!]

Hepatitis A (IgM +) [2*]

Hepatitis B (detection of viral antigen, antibody, or nucleic acid) [M*]

Hepatitis C (detection of antibody or nucleic acid) [M*]

Human immunodeficiency virus (Western blot, P-24 antigen, or viral culture) [2&ii]

Human immunodeficiency virus [M&iig] (RNA or DNA nucleic acid tests)

Listeria monocytogenes [2*]

Mycobacterium tuberculosis [2&iii!@]

Neisseria gonorrhoeae [2*]

Neisseria meningitidis [2*!]

Rabies [I*]

Rubeola [I*!]

Salmonella species [2*!]

Shigella species [2*!]

Treponema pallidum [2!]

Rare diseases of public health significance [I*]

Vibrio cholerae [I*!]

Yersinia pestis [I*!]

CODE LEGEND

[I] **Immediately notifiable**
[2] Notifiable within 2 work days
[M] Notifiable on a monthly basis
[*] Notifiable to the local health jurisdiction of the patient's residence
[&i] Notifiable to DOH Lead Program **360-236-4252**
[&ii] Notifiable to DOH IDRH Assessment **360-236-3419**
[&iii] Notifiable to DOH TB Reporting Line **360-236-3397**
or TB Reporting Fax Line **360-236-3405**
[!] Specimen submission required
[@] Antibiotic sensitivity testing (first isolates only)

To report a Notifiable Condition, contact the local health jurisdiction of the patient's residence, unless the condition is reportable directly to DOH. If the patient's local health jurisdiction is unknown, please notify the local health jurisdiction of the health care provider that ordered the diagnostic test.

If no one is available at the local health jurisdiction and a condition is immediately notifiable, please call 1-877-539-4344

For more information, please see WAC 246-101 or http://www.doh.wa.gov/notify

January 2007

Notifiable Conditions & Washington's Hospitals

Washington State Department of Health

The following conditions are notifiable to local public health authorities in Washington in accordance with WAC 246-101. Timeframes for notification are indicated in footnotes. **Immediately notifiable conditions are indicated in bold** and should be reported when suspected or confirmed. These notifications are for conditions that occur or are treated in the hospital. Hospital laboratories should use the *Notifiable Conditions & Washington's Laboratories* poster. (April 2005)

Acquired immunodeficiency syndrome (AIDS) [3] (including AIDS in persons previously reported with HIV infection)
Animal bites [I]
Arboviral disease [3] (West Nile virus disease, dengue, Eastern & Western equine encephalitis, etc.)
Botulism [I] **(foodborne, wound and infant)**
Brucellosis [I]
Campylobacteriosis [3]
Chancroid [3]
Chlamydia trachomatis [3]
Cholera [I]
Cryptosporidiosis [3]
Cyclosporiasis [3]
Diphtheria [I]
Disease of suspected bioterrorism origin [I] **(including Anthrax and Smallpox)**
Disease of suspected foodborne origin [I] **(clusters only)**
Disease of suspected waterborne origin [I] **(clusters only)**
Enterohemorrhagic *E. coli*, including *E. coli* O157:H7 infection [I]
Giardiasis [3]
Gonorrhea [3]
Granuloma inguinale [3]
***Haemophilus influenzae* invasive disease** [I] **(under age five years, excluding otitis media)**
Hantavirus pulmonary syndrome [3]
Hemolytic uremic syndrome (HUS) [I]
Hepatitis A, acute [I]
Hepatitis B, acute [3]; chronic [M] (initial diagnosis only)
Hepatitis B, surface antigen positive pregnant women [3]
Hepatitis C, acute and chronic [M] (initial diagnosis only)
Hepatitis, unspecified (infectious) [3]
HIV infection [3]
Immunization reactions [3] (severe, adverse)
Legionellosis [3]
Leptospirosis [3]
Listeriosis [I]
Lyme disease [3]
Lymphogranuloma venereum [3]
Malaria [3]
Measles (rubeola) [I]
Meningococcal disease [I]
Mumps [3]
Paralytic shellfish poisoning [I]
Pertussis [I]
Plague [I]
Poliomyelitis [I]
Psittacosis [3]
Q fever [3]
Rabies [I]
Rabies post-exposure prophylaxis [3]
Relapsing fever (borreliosis) [I]
Rubella [I] **(including congenital)**
Salmonellosis [I]
Shigellosis [I]
Syphilis [3] (including congenital)
Tetanus [3]
Trichinosis [3]
Tuberculosis [I]
Tularemia [3]
Typhus [I]
Vibriosis [3]
Yellow fever [I]
Yersiniosis [3]

Outbreaks of disease that occur or are treated in the hospital (pertussis, influenza, nosocomial infections, viral meningitis, etc.) [I]
Unexplained critical illness or death [I]
Rare diseases of public health significance [I]

The following diagnoses are notifiable to the Washington State Department of Health in accordance with WAC 246-101. Timeframes for notification are indicated in footnotes. **Immediately notifiable conditions are indicated in bold** and should be reported when suspected or confirmed.

Notification time frame: [I] **Immediately,** [3] Within 3 work days, [M] Within one month

Asthma, occupational (suspected or confirmed) [M]	**1-888-66-SHARP**
Birth Defects [M]: Abdominal wall defects, Autism spectrum disorders, Cerebral palsy, Down syndrome, Alcohol related birth defects, Hypospadias, Limb reductions, Neural tube defects, Oral clefts	**360-236-3492**
Gunshot Wounds [M]	**360-236-3603**
Pesticide Poisoning (hospitalized, fatal, or cluster) [I]	**1-800-222-1222**
Pesticide Poisoning (all other) [3]	**1-800-222-1222**

If no one is available at the local health jurisdiction and a condition is immediately notifiable, please call 1-877-539-4344

For more information, please see WAC 246-101 or http://www.doh.wa.gov/notify

Notifiable Conditions & the Health Care Provider

Washington State Department of Health

The following conditions are notifiable to local public health authorities in Washington in accordance with WAC 246-101. Timeframes for notification are indicated in footnotes. **Immediately notifiable conditions are indicated in bold** and should be reported when suspected or confirmed. (April 2005)

Acquired immunodeficiency syndrome (AIDS) [3] (including AIDS in persons previously reported with HIV infection)
Animal bites [I]
Arboviral disease [3] (West Nile virus disease, dengue, Eastern & Western equine encephalitis, etc.)
Botulism [I] **(foodborne, wound and infant)**
Brucellosis [I]
Campylobacteriosis [3]
Chancroid [3]
Chlamydia trachomatis [3]
Cholera [I]
Cryptosporidiosis [3]
Cyclosporiasis [3]
Diphtheria [I]
Disease of suspected bioterrorism origin [I] **(including Anthrax and Smallpox)**
Disease of suspected foodborne origin [I] **(clusters only)**
Disease of suspected waterborne origin [I] **(clusters only)**
Enterohemorrhagic *E. coli*, including *E. coli* O157:H7 infection [I]
Giardiasis [3]
Gonorrhea [3]
Granuloma inguinale [3]
***Haemophilus influenzae* invasive disease** [I] **(under age five years, excluding otitis media)**
Hantavirus pulmonary syndrome [3]
Hemolytic uremic syndrome (HUS) [I]
Hepatitis A, acute [I]
Hepatitis B, acute [3]; chronic [M] (initial diagnosis only)
Hepatitis B, surface antigen positive pregnant women [3]
Hepatitis C, acute and chronic [M] (initial diagnosis only)
Hepatitis, unspecified (infectious) [3]
Herpes simplex, genital (initial infection only) and neonatal [3]
HIV infection [3]
Immunization reactions [3] (severe, adverse)
Legionellosis [3]
Leptospirosis [3]
Listeriosis [I]
Lyme disease [3]
Lymphogranuloma venereum [3]
Malaria [3]
Measles (rubeola) [I]
Meningococcal disease [I]
Mumps [3]
Paralytic shellfish poisoning [I]
Pertussis [I]
Plague [I]
Poliomyelitis [I]
Psittacosis [3]
Q fever [3]
Rabies [I]
Rabies post-exposure prophylaxis [3]
Relapsing fever (borreliosis) [I]
Rubella [I] **(including congenital)**
Salmonellosis [I]
Shigellosis [I]
Syphilis [3] (including congenital)
Tetanus [3]
Trichinosis [3]
Tuberculosis [I]
Tularemia [3]
Typhus [I]
Vibriosis [3]
Yellow fever [I]
Yersiniosis [3]
Unexplained critical illness or death [I]
Rare diseases of public health significance [I]

The following diagnoses are notifiable to the Washington State Department of Health in accordance with WAC 246-101. Timeframes for notification are indicated in footnotes. **Immediately notifiable conditions are indicated in bold** and should be reported when suspected or confirmed.

Notification time frame: [I] **Immediately,**
[3] Within 3 work days, [M] Within one month

Asthma, occupational (suspected or confirmed) [M]	**1-888-66-SHARP**
Birth Defects [M]: Autism spectrum disorders, Cerebral palsy, Alcohol related birth defects	**360-236-3492**
Pesticide Poisoning (hospitalized, fatal, or cluster) [I]	**1-800-222-1222**
Pesticide Poisoning (all other) [3]	**1-800-222-1222**

If no one is available at the local health jurisdiction and a condition is immediately notifiable, please call 1-877-539-4344

For more information, please see WAC 246-101 or http://www.doh.wa.gov/notify

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